SPATIO-TEMPORAL PATTERNS OF AGRICULTURAL MARKETING: A CASE STUDY OF ARARIA DISTRICT (BIHAR)

ABSTRACT

THESIS

SUBMITTED FOR THE AWARD OF THE DEGREE OF

Doctor of Philosophy

IN

GEOGRAPHY

BY

MD. MINHAJUL HODA

UNDER THE SUPERVISION OF

DR. NIZAMUDDIN KHAN

DEPARTMENT OF GEOGRAPHY
ALIGARH MUSLIM UNIVERSITY
ALIGARH (INDIA)

2005

ABSTRACT

SPATIO-TEMPORAL PATTERNS OF AGRICULTURAL MARKETING: A CASE STUDY OF ARARIA DISTRICT (BIHAR)

The role of an efficient agricultural marketing system as a key component for accelerating agricultural production and thereby promoting economic growth in developing countries is now widely accepted. In the past, more emphasis was given to the increase of agricultural production throughout the country under hectarage expansion and improvement in productivity. Issues related with marketing of agro-commodities have usually taken a secondary place. Government is now increasingly becoming aware that agricultural production and marketing are two sides of the same coin.

In India, there is widespread belief among the producers of agricultural commodities that the farming activities, especially, the production of various kinds of food grains have become uneconomic and non-remunerative. Because the ratio of production cost and output price is expanding year after year due to removal of subsidies from agricultural inputs and insufficient marketing facilities available at the time of harvest of crops. Further, a relatively larger margin of middlemen in the consumer's price of various agro-products is also a common feature, which reflects exploitative nature of oligopolistic and semi-monopolistic practices in agricultural trade, making farmers handicapped. Large seasonal fluctuations in arrivals and prices of the agro-products are another expression of an inefficient marketing system.

The study of actual performance of agricultural marketing, in India in general and in Bihar in particular, however, remains a

neglected area about which a concrete and rational understanding has not been developed. Past studies have given only a general description of prevailing marketing systems for transaction of different commodities in distinct areas. But all these efforts at academic as well as government levels are very much influenced by an economist's macro-level economic understanding of the problem. Thus most of these studies have economic overtones and emphasis. The study of agricultural marketing system in geography deals with micro-level spatial inquiry of agricultural markets. It takes into consideration physical, socio-economic and political factors etc which affect markets and its different aspects. Because the agricultural practices/production and behaviour of marketing of the farm products are the combined effect of space-time and socio-economic attributes of the given geographical area.

The relevance of geographical enquiry of agricultural marketing system is very obvious. The marketing as a process does exist in the geographical space as market centres. The effectiveness of this process is reflected in the various spatial characteristics of market centres, viz. their size, network, connectivity, extent etc. The spatial efficiency, integration, accessibility, expansion and availability of amenities at market centres depend upon location of these centres. Thus the spatial system of market is affected by all the factors physical, social as well as cultural, which interplay at local level. The effect of this local interplay of factors spreads to higher level of spatial hierarchy of markets. Ultimately the economic process and efficiency of the markets are affected by this spatial characteristic of market centres.

A systematic study of the nature of marketable and marketed surplus in spatio-temporal framework with reference to backward and

agriculturally sensitive regions needs to be understood to help in policy making. It is because population of backward region mainly subsists on agriculture and its allied activities. The typical characteristics of Indian agriculture have been the pre-dominance of marginal and small farmers with tiny plots and heavy pressure per unit of land, lower level of productivity and so on. As a result there is highest distress sale and low prices during post-harvest period, while during lean period low arrival of marketed surplus results in high prices of agricultural commodities. The elimination of these problems needs proper policies and their implementation.

The nature of the study selected for research work is of academic as well as of applied importance. Academically, it is going to help in creating new insight to understand agro-marketing in spatio-temporal framework. On the other hand at policy level it would generate data for accurate estimation of existing problem. The study area is essentially an agrarian economy belonging to flood prone region of *Kosi* plain. Climatically and economically the district is marginal in nature where a primary activity like agriculture is the only main source of livelihood for the people. The marketable surplus is meager in study area as compared to developed areas of the state. It is because of physical and socio-economic characteristics of the study area. Moreover, the farmers who are selling their marketable surplus in the market centres are not in position to get better price, as a result of which they have remained poor. It has affected the economy of study area in particular and Bihar in general.

An efficient movement of farmers' surplus to consumers will raise their income level and will promote the economic development of study area. The farmers would allocate their comparative advantage to invest on modern agricultural inputs to obtain the

enhanced productivity and production. This, in turn, would contribute to an increasing marketable/marketed surplus of agricultural commodities and inter-regional trade. This would ultimately increase the demand for improved market facilities as a whole.

However, before formulating any such policies to meet these problems, it seems necessary to find out the marketing conditions under which surpluses are disposed off in the market spatially and temporally. Further, it is necessary to identify and quantify the marketing costs and margins that determine efficiency of agricultural marketing system, so that the improvements can be directed towards those factors which are crucial in determining market efficiency. This research problem has its genesis in the observation of general neglect of these issue related with marketable/marketed surplus, and inefficient pattern of agricultural marketing in the region of North Bihar. An understanding of all these factors in a backward and agriculturally sensitive region will provide substantial empirical evidences for the market planners and policy makers to formulate such policies which will be of immense help in increasing agricultural marketing efficiency.

An attempt is made to analyze these problems in the present study. Based on empirical evidence of the study area an attempt is also made to suggest some improvement in the exiting agricultural marketing system through a well designed 'integrated market development policy'.

With a view to understand and analyze the existing agricultural marketing system in the study area i.e. Araria district (Bihar), the following objectives are to be understood.

(1) To understand the existing agricultural marketing system in the study area.

(2) To estimate the spatial and temporal patterns of marketed surplus of different agricultural commodities in the sampled market centres and villages.

(3) To asses the spatial and temporal patterns of price structure of different agricultural commodities in the sampled market centres.

(4) To find out the marketing costs of different agricultural commodities in the sampled market centres.

(5) To examine the difference in the prices received by the farmers and intermediaries in the market with a view to determine the nature and extent of price spread in the market.

(6) To furnish empirical evidences to market planners to help them formulate relevant and effective policies, and

(7) To suggest a new integrated market development policy for overall agricultural development of the study area.

The following hypotheses have been put forward with a view to infer result regarding the discussed objectives.

(1) Seasonal fluctuations in arrivals and prices of agricultural commodities are pronounced in the agriculturally backward areas.

(2) The village level sale and distress sale are the result of small holdings and small marketable surplus.

(3) Larger is the price spread; greater is the inefficiency in the marketing system, and vice versa.

(4) Better spatial integration of market centers at different levels of a marketing channel due to efficient transportation and other infrastructural facilities reduces unnecessary spatial unevenness of marketed surplus.

(5) Government intervention in terms of regulation measures leads to higher growth of marketed surplus.

Owing to difficulty in collection of the primary data regarding the marketed surplus and price structure at wider scale the researcher, selected a micro-level region, "*Araria district,*" as the study area. It lies in the extreme eastern part of Bihar along the border of Nepal. It is located between 25° 56′ North and 26° 35′

North latitudes and between 87° 3′ East and 87° 42′ East longitudes, in which 2124831 people inhabit over 2830 sq. kms. area. The study area is divided into 2 sub-divisions and 9 community development blocks for administrative convenience.

Agriculture is the main economic activity in the district. Net-sown area occupies about 65.76 per cent of the total reported area of the district. There are three cropping seasons viz., *Rabi, Kharif* and *Zaid.* The main crops are paddy, wheat and maize occupying more than 70 per cent of gross cropped area. Besides, jute, pulses, oilseeds, vegetables and fruits are also cultivated with varying amount of hectarage and production. Animal husbandry is also practiced as a supplementary occupation to agriculture.

The study area has 751 inhabited villages 3 towns, 2 regulated markets and 198 rural periodic markets. Industrially the region is very backward. Cottage and small-scale industries based on forest and agriculture products are the main features. Transportation network is not well developed in the area. Metalled roads approach only 33.73 per cent villages and 25.13 per cent villages have power supply.

The present study is based on both the primary and the secondary sources of data. Primary data have been generated from three tier marketing agencies i.e. village level, periodic market and regulated market. They represent the major components of agro-marketing system in Araria district. Six per cent (45) of total villages and 10 per cent (20) of total periodic markets have been selected on the basis of stratified random sampling technique for detail enquiries. 100 per cent regulated markets (02) are also selected for the survey. The reason is, they are government controlled, and represent regulated agriculture markets in each district of every province of the

country. Further, 10 per cent of producer sellers in all sampled periodic and regulated agriculture markets and 50 households of each sampled village have been selected on the basis of stratified random sampling techniques. They have been thoroughly interviewed for relevant enquiries regarding the various aspects of research problem. Besides, seven more periodic markets, based on some specific consideration like distance from road, location in an urban centre or along the canal and so on, are also being included in the sampled markets. Only six major crops rice, wheat, maize, pulses, potato and onion have been taken into consideration in the present study programmes. The criteria of selection of crops are based on their hectarage, production and quantities of marketable and marketed surplus in the markets.

All the sampled villages were visited before conducting actual survey. In this preliminary survey list of households was prepared and village inhabitants were classified on the basis of size of landholding, i.e. marginal, small, medium and big farmers. Keeping in view total 50 households in each of sampled villages, farmers belonging to different categories according to size of land holding were selected in the proportion, following stratified random sampling technique. The researcher enquired from them about market participants' socio-economic behaviour at the time of agricultural transaction, mode and volume of transactions of commodities and their specific market channels, and the spatio-temporal patterns of market transaction of agro-products and that of the traders in sampled markets and villages.

In addition to primary data, the study is also based on secondary sources of data which have been collected mainly from the following sources.

(1) Census Office Patna.

(2) District Statistical Office Araria/Purnea.

(3) Agricultural Marketing Office Araria.

(4) District Council (Zila Parisad) Office Araria.

The collected data have been processed and brought in to tabular forms. These processed data are analyzed by using simple statistical techniques especially percentage method with a view to derive some specific conclusion regarding spatio-temporal patterns of agricultural marketing of Araria district.

The three tier analysis of agricultural marketing in Araria district, in this study, provides some insight about their relative importance and role in the development and efficiency of agro-marketing. The proportion of marketed surplus of these commodities at village level, in periodic markets, and in regulated markets indicates towards the level of development of agro-marketing system in Araria district. The study highlights that the modernization, efficiency and vigour of agro-marketing is positively dependent upon the uniformity of marketing practices, uniform regulatory provisions, accessibility to bigger market centers, reduction of market margins and of course on post-harvest storage facilities.

Thus as a generalized statement, it can be argued that structural changes in farming practice and marketing of agro-commodities would lead to effective integration of market centers. These market centers under uniform regulatory measures, being accessible to both small and big farmers, would provide better prospect for agricultural marketing. It would enhance overall efficiency of the system as well.

The findings of this study in coming paragraphs would reveal that according to general parameters of efficient agro-marketing, Araria district still has a very primitive marketing system. The greater transaction of agro-commodity at village level and in rural markets

amply proves the point that Araria has to go a long way before any positive change can take place for the general lot of a great majority of marginal and small farmers. As a large number of these farmers is at disadvantageous position, they have no say in the bargain. This inherent unequal power balance between the producers and the intermediaries in the existing system is the real bane of agro-marketing system in Araria which is reflected in, and furthered by, the overall inefficiency of this system.

The agricultural products are marketed through two types of trading system; private trading system (informal agencies) and public trading system (formal agencies). In private trading, the commodities are primarily operated by private traders, like wholesale traders, village traders, itinerant traders, commission agents, etc who purchase the agricultural surplus from the producers at free rate on the basis of price agreement between them and producer sellers.

Under the informal trading it is found that the producer seller sells his produce at the village site to one and several types of intermediaries or brings it directly to wholesale market. It is found from the survey that paddy has been purchased in the largest proportion by mills constituting 59.55 per cent, followed by periodic markets with 8.79 per cent of total transaction performed through different informal marketing agencies. Similarly, rice has its share of 35.96 per cent, wheat 35.96 per cent, maize 25.73 per cent, pulses 51.29 per cent, potato and onion 50.18 per cent respectively of the total transaction in the village markets. This finding shows the overwhelming importance of informal trading system in the marketing of agricultural commodities in Araria district.

On the other hand under formal trading system, public or government agricultural trading system has come into existence with

a view to ensure fair price for producers' surplus as an incentive to increase the production, to supply essential commodities to the consumers at reasonable price, to minimize seasonal fluctuations and to maintain the buffer stock. The main public trading agencies are Food Corporation of India (FCI) and State Food Corporation (SFC). Under formal agencies, regulated markets are one of the most important agencies of agricultural marketing system. They have accounted for transaction of 24.45 per cent of marketed surplus of paddy, 63.4 per cent of marketed surplus of rice, 32.26 per cent of wheat, 74.27 per cent of maize, 48.71 per cent of pulses. Potato and onion have accounted 59.29 per cent and 49.82 per cent respectively. Other government agencies like FCI and SFC purchase only wheat and paddy to minimize seasonal fluctuation of their prices and to undertake procurement for maintenance of the buffer stock.

The village level survey of transaction of the agricultural commodities shows that paddy has recorded highest share of marketed surplus in regulated markets. While in the case of vegetables especially onion, they have been transacted in largest proportion at village market among different market agencies. Maximum transaction at village level is under taken especially by the small and marginal farmers. They have very small size of marketable surplus which discourages them to sell their surplus in distant and specialized agricultural markets, to avoid unnecessarily transport and time costs. The purchase of agricultural produces by consumers directly from growers/farmers house is another important agency of agricultural marketing channel in which the margin of commission agents to consumers' price is reduced. So both farmers and consumers get benefited. Besides, time of the consumers (usually

agricultural and land less laborers) is saved in which they can earn more wages.

Study area experiences various methods of transaction of agro-commodities at market and farm levels. Undercover, open auction, quotation on samples, private negotiation and close tender are important methods of transaction. The undercover and by quotation on sample methods are practiced only in wholesale periodic markets, whereas, open auction is generally practiced in government control regulated markets. Moreover, in this study various market channels of agro-commodities are also being identified. Generally, marketing of agricultural commodities undergo change of ownership through time and space. The intermediaries are involved in the passing of commodities from producers to ultimate consumers which form marketing channels. Paddy/rice and wheat are having rather complex channels than maize, pulses, potato and onion. It is due to spatio-temporal variations in their demand and supply.

Spatial pattern of marketed surplus of selected crops in the sampled markets show that rice accounts for highest share of 46.63 per cent of total marketed surplus of various agricultural products. It is followed by wheat with 26.45 per cent, potato 10.38 per cent, onion 9.91 per cent, maize and pulses 3.32 per cent and 3.33 per cent respectively. The variation in marketed surplus of different crops in the district is due to variation in demand and supply of these commodities in the region.

Similarly, different types of marketing agencies dealing with agricultural commodities also show variation in their marketed surplus. Regulated and urban periodic markets have highest proportion of marketed surplus in the study area. Analysis shows that the market centers which are well connected with roads and railways

have a higher proportion of marketed surplus. Moreover, the market centers which are located in the eastern and northern parts of Araria district have higher marketed surplus of the agricultural commodities than that of the market centers located in the western side of the district. It is because of well connectivity of eastern and northern parts as well as higher agricultural productivity in these regions. On the other hand lower marketed surplus in the western part of the district is due to lower productivity of crops caused by flood from *Kosi* river as well as lesser spatial connectivity among the markets. This supports the hypothesis that better spatial integration of market centers at different levels due to efficient transportation and other infrastructural facilities reduces unnecessary spatial unevenness of marketed surplus.

Seasonal arrival pattern is discussed on the basis of three main periods (1) post-harvest period (2) intermediate period, and (3) lean period. The study of the seasonal pattern of marketing of selected crops indicates that the arrivals do not follow any definite pattern during an agricultural year. It is due to the fact that most of commodities have a different growing time during an agricultural year. Study reveals that average arrival of marketed surplus for the district as a whole during post-harvest period is 51.62 per cent and during intermediate period it is 29.40 per cent. Whereas during lean period it constitutes 18.98 per cent. The arrivals of marketed surplus of these commodities vary spatially and temporally, crop-wise and market-wise. Similarly study finds that arrivals of marketed surplus of potato and onion are highest i.e. 57.42 per cent and 55.47 per cent respectively, during post-harvest period. While during lean period the shares of onion and potato are 14.11 per cent and 14.51 per cent of their overall arrivals respectively.

Largest proportion of the arrivals of the marketed surplus of potato and onion during post-harvest period is due to the fact that they are cash crop and of perishable nature as well, hence the farmers immediately wish to sell them. Moreover, highest arrival of marketed surplus of all agro-commodities during post-harvest period indicates that small and marginal farmers sell a large quantity of their surplus, particularly as distress sale, immediately after the crop harvest. The result further shows that seasonality of arrivals is found more pronounced in cash crops than in non-cash crops. It means that producer sellers lack storing facilities and consequently sell their produces in the market immediately after harvest. This supports the hypothesis that there is a wide fluctuation in seasonal arrival of marketed surplus of different agricultural commodities.

The volume of marketed surplus of agricultural commodities in the sampled markets has improved well during the period 1993-2003 at an average annual rate of 3.23 per cent in all the selected markets. General trend of growth of the marketed surplus has been the result of the agricultural development in the study area, through the horizontal and vertical growth in agriculture in terms of area and production respectively, during post-green revolution period.

The growth of marketed surplus is not uniform in every market but varies spatially among the periodic and regulated markets. Maximum growth has been recorded in both the selected regulated markets i.e. 7.66 per cent in Forbesganj and 3.01 per cent in Araria, while in selected periodic markets, marketed surplus varies from maximum 1.83 per cent in Araria Court to minimum 0.79 per cent in Lalokhur. Wide difference in the growth of marketed surplus in regulated and periodic markets is attributed to the fact that market regulation restricts malpractice in the transaction of agricultural

commodities and thus becoming an incentive for farmers to sell their produce there. That is why marketed surplus has increased sharply in regulated markets than the periodic markets. It supports the hypothesis that government intervention in terms of regulation measure leads to greater market efficiency and consequent to it there is rapid increase in the marketed surplus in the regulated markets in comparison to periodic market centers.

A spatial analysis of the of marketed surplus of the agricultural commodities at the level of operational land holding indicates that the proportion of sales of all agricultural commodities i.e. rice, wheat, maize, pulses, potato and onion at village level itself is very high indicating thereby the preference of the farmers to sell their produce at their door. The proportion of the total sale at village level for all selected crops as a whole is 39.45 per cent and it varies crop-wise. The larger percentage of marketed surplus of different crops at village level is on account of the poor transportation and communication facilities to carry produce to far-off big markets. However, farmers with largest size of holding (above 8 acres) sell 49.63 per cent of their total surplus in the regulated and urban market centers. While farmers with lowest size of holding (up to 2 acres) have almost negligible presence in these market centers.

A further analysis of the marketing pattern shows that proportion of sale in the specialized market centers rises as the size of landholding increases. It is on account of the fact that the big farmers have large marketable surplus and own means of transportation and therefore they do not find any difficulty in selling their produce in the main market centers. The poor farmers lack transportation facilities and also they have small quantity of surplus to sell in the main market centers. It supports the hypothesis that big farmers are more

dominant in selling their produce in the regulated and urban market centers than the small one.

The over all proportion of marketed surplus of all selected commodities shows that regulated markets and periodic markets have their increased share. But a closer look of the situation reveals that transaction in regulated markets is mostly done by big farmers. Small farmers are found almost negligible in these markets. Thus the advantage of regulated markets disproportionately goes to big farmers skewing the socio-economic equilibrium of the village as well as tilting power leverage in the agricultural marketing system in favour of big farmers and intermediaries.

The variables selected for analyzing the price behaviour of six important agricultural crops namely rice, wheat, maize, pulses, potato and onion, are the wholesale purchase price and wholesale sale price in three different agricultural seasons. The wholesale purchase price refers to that which the wholesalers/commission agents pay to the producer sellers and other selling agencies; whereas the wholesale sale price refers to that which the retailers and other traders pay to the wholesalers/commission agents. From the analysis of the data, it is found that there is wide difference in the wholesale purchase and wholesale sale prices of agricultural commodities between post-harvest and lean periods. It is due to seasonal character of the production and arrival patterns of these agricultural commodities, while their consumption is more or less uniform over different months of the year. It leads to seasonal fluctuations in their prices.

Moreover, crop-wise study shows wide fluctuations in the prices of these commodities. As far as rice is concerned maximum seasonal variations are up to 76.32 and 63.71 per cent in wholesale purchase and wholesale sale prices between post-harvest period and

lean period. For wheat, maize and pulses the maximum seasonal variations in wholesale purchase price between post-harvest and lean period are 37.89 per cent, 27.05 per cent and 20.21 per cent respectively. On the other hand, the maximum seasonal variation in wholesale sale price between these two periods for wheat, maize and pulses are 31.36 per cent, 33.25 per cent, 22.37 per cent respectively. Maximum seasonal variations in wholesale purchase and wholesale sale prices between post-harvest and lean period for potato and onion have been recorded 161 per cent, 126.76 per cent and 152.77 per cent, 112.26 per cent respectively. Potato and onion have recorded maximum seasonal variations in their prices because of their perishable nature and being commercial crops.

The seasonal behaviour of the wholesale purchase price over the space constitutes the most important indicator of the efficiency of marketing system. Spatially, the variations in price do not seem much, however, it varies market-wise. Spatial patterns of price structure of different crops show that regulated and urban periodic markets are having better price structure of the selected agricultural commodities than the smaller and inaccessible periodic market centers. Location and size of market centers play a decisive role in determining the price structure of different agricultural commodities. The result shows that there are not much spatial variations in minimum and maximum prices of the commodities both in regulated and periodic markets. It shows that these markets are very much spatially integrated. Whereas, the seasonal variation in the prices is more pronounced in the markets of Araria district. Besides, another marked feature of the study area is that the seasonal fluctuation in prices of agro-commodities is less pronounced in foodgrains and pulses compare to the cash crops i.e. potato and onion, it is more

pronounced. This supports the hypothesis that seasonal price fluctuation is more pronounced in an agriculturally backward area.

The Araria district is a deficit region of agricultural products, especially, of food crops. It is a consuming market where agricultural commodities are brought and sold by the traders belonging to places outside the district, especially from the terminal markets. Further, from the point of view of the supply side, the crops of inferior quality are marketed here under a situation of compulsions, which are dumped in the market immediately after harvest. This leads to wide fluctuation in the prices. As a result the seasonal variations of wholesale sale price and wholesale purchase price are high. However, a market-wise comparison of price structure of different agro-commodities shows that traders' manipulative grip over the producer-sellers and itinerant traders is stronger in interior and smaller markets than their counterparts in regulated markets.

The costs of marketing are expenses incurred in bringing goods and services from producers to consumers. It is found that the costs of marketing of agricultural commodities are high in the study area. The factors responsible for high costs of marketing are too many and these make the agricultural marketing system highly exploitative in character and imperfect in nature. Analysis of the types and variations of costs indicates that the various markets charges; particularly among periodic markets are not uniform and they are mostly charged in an arbitrary manner. These charges not only show large variation but the mode of their payment also differs, which is payable by the sellers in some instances and the buyers in other. The main drawback of these charges is that there is no uniformity or generally recognized rules as to which charges should be payable by sellers and which by buyers. However, in recent years,

the Government of Bihar through the Bihar Agriculture Produce Markets Act, 1960 and its subsequent amendments therein, has made certain provisions under which each market charge has been clearly defined and fixed. But it is practiced only in government controlled regulated markets.

In the present study, the price spread has been estimated by comparing the prices at different levels of marketing with the help of method of concurrent margin. While studying the various components of price spread attention has been focused on producers' share in the consumers' price. It is hypothesized that larger the price spread the greater is the inefficiency in the marketing system, and vice-versa. The study indicates that higher marketing costs and price spread is largely on account of high handling and transportation costs, greater loading and unloading charges and high commission charges along with some unspecified charges by intermediaries. A further comparative analysis of price spread of regulated and periodic market shows that the producers' share in consumers' price is higher in the regulated markets. It is because of regulatory measures introduced in these markets, and to this extent this may be said as a positive gain of the establishment of the market yard. The study of the net price received by the producer seller through different marketing channels reveals the fact that the direct sale to consumer fetches the highest net price to producer seller. The sale performed through the *katcha arhatiya* is the next profitable channel for the producer seller. The sale performed through the retailer is the third best channel and much more remunerative as compared to sale taken place through the wholesaler, the village merchant and itinerant dealer. The most important factors which affect the price spread are (a) multiplicity of intermediaries and their profit margin. (b) transport

and storage costs (c) commission and brokerage charges. (d) handling costs etc.

From the above discussion it is clearly evident that agricultural marketing in Araria is varied in terms of space and time with respect to arrival and prices. Market arrival plays an important role in determining price of agro-commodities as it represents supply side. However, the study area is having highly imperfect nature of market due to its oligopolistic tendencies, inadequate system of marketing, and lack of infrastructural facilities. The imperfect nature of the agricultural marketing system has been serving as a serious constraint for the development of the agricultural sector and has resulted in non-remunerative price to the farmers on the one hand and unreasonable price to the consumers on the other. The conditions, under which the farmers dispose of their produce and the price which they receive from them, have significant bearing on their farm activities. It is now commonly believed that the improved marketing facilities contribute to the agricultural development by encouraging magnitude of production. Actual loss of products is caused by the inefficiencies in their movemcnt from the farmers to the consumers, passing through various phases like, processing. storing and transportation of the agricultural products. The variation in the storage costs and loses are very high. Transportation and handling losses also vary with the nature of crop and technique of marketing. The presence of various undesirable market charges and the exploitative behaviour of the traders contribute to higher marketing costs and price spread.

An efficient marketing system encourages increase in agricultural production by reducing the marketing costs incurred by the producers and by lowering the prices paid by the consumers. This expands the market and subsequently brings higher returns to producers. The need for an efficient

marketing system calls for an improvement in existing marketing system. Since the recommendation of Royal Commission on Agriculture (1928) the central government has taken a number of measures to improve agricultural marketing in the country. Among such measures taken by the state government mention may be made of constitution of Agricultural Marketing Section of the Department of Agriculture in March 1935, the Agriculture Produce (Grading and Marketing) Act 1937, regulation of markets, throughout the state, the market development project introduced in 1973 to develop and modernize the agricultural markets in Bihar to take over the wholesale trade in the year 1974 etc. Some of these measures have attained partial success, while others are either completely withdrawn or are in the initial stages of implementation. Even after the establishment of market yard at important places it still remains a dream to achieve the goal of efficient marketing system.

Thus, the present study suggests that in order to promote the efficiency of agricultural marketing and optimal distribution as well as to augment marketable/marketed surplus, an integrated market development policy comprising the following measures should be applied to the marketing of agro-commodities.

First, the government should adopt the policy to increase the agricultural production, with a view to increase marketable/marketed surplus. Although considerable progress has been made, particularly over the last two decades but the production in the state has not yet attained the desired results as anticipated by the state government. A major reason for this disappointing position is that not enough attention has been devoted to provide for the facilities and services which must be available to the farmers if agriculture is to develop. The past government policy is not found any more relevant or effective in present situation, in assisting orderly distribution of marketed surplus and in providing better prices to the farmers for

their produces. The findings of this study indicate that the development of big urban and regulated market does not appear to be fruitful for the small and marginal farmers. A very large percentage of the farmers, particularly small and marginal, find it more convenient to sell its produce in villages and *haats*. It is thus, clear that rural primary markets including *haats* are more relevant, and will continue to be so for many years for the great majority of the farmers. With this reality the basic task of the government is to reorient the regulatory measures in favour of periodic markets by providing marketing and credit facilities which alone can protect the farmers from the exploitation of various intermediaries existing between them and the consumers.

Secondly, since the farmers sell the largest proportion of their production during the three/four months immediately after the harvest, stability of harvest price is an important issue for the agricultural production and the marketing decisions. The price which farmers receive during this period influences the proportion of harvested crops sold during this period, as well as their ability to finance next year's crop. The farmers should be assured of at least the minimum price after post-harvest on which they can survive as well as invest for cultivation of a particular crop. This means that there should be an effort on the part of the government to stabilize prices particularly during post-harvest period.

Thirdly, though seasonal fluctuations are not expected to be wiped out altogether from an agricultural market but their effects can be minimized. Large seasonal fluctuation in price causes a hardship on consumers. This also leads to conservative storing plans for the following years. Seasonal price instability encourages speculations by those who are often not experts of market conditions and this

introduces a great degree of uncertainty into the production plans of the farmers, and the marketing plans of consumers. A financial help in the form of easy credit and aid to the farmers particularly small and marginal ones, on the pledge of taking their produce for marketing can also play an important role in minimizing their dependency on the intermediaries. Thus, a balanced program should be attempted to raise and stabilize harvest price while holding within limits the variability in seasonal price fluctuations.

Fourthly, the present study indicates, the price spread is quite large on account of various undesirable marketing charges and arbitrary deductions made by the traders. It, therefore, becomes imperative that the efforts should be made to increase producers' share in consumers' price thereby causing a reduction in the wholesalers' and retailers' margins. However, it is encouraging to note that the trade margin has fallen after the establishment of the regulated markets due to abolition of various undesirable market charges. Still a large number of small and large farmers sell their crops in periodic markets. There is a need to strengthen this aspect with the help of the government to reduce the marketing margin in periodic markets too.

Fifthly, marketing can not be divorced from a consideration of production process. Farmers need integrated assistance for their production activities. The problems faced by small farmers in marketing their output arise basically from the conditions under which they produce. They borrow even to meet their consumption needs. Their farm business income is far below the minimum, which is necessary for bare survival. As they borrow mostly from the village money-lenders, they are bound to sell their commodities to them as they have taken loan at the lower interest rates. The

marketing system is dominated by the small farmers therefore government intervention is essential to protect the interest of the farmers by giving loan at right time. The problems of production and marketing need to be tackled simultaneously through integrated agricultural policies. Any one-sided approach is not likely to yield much result.

Sixthly, the organization of cooperative marketing requires additional preference for improving the marketing conditions. Because it will strengthen the bargaining power of the farmers at the first stage of marketing i.e. from the farm to wholesale market. Though, cooperative marketing is not playing any important role in agricultural marketing in the study area, it is possible to inter-link cooperative credit and cooperative marketing to reduce the dependence of farmers on influential intermediaries and money lenders.

Lastly, the findings of this study have a large range of implications. It needs appropriate measures to facilitate the marketing efficiency. Because, there is ample evidence to show that inspite of several measures, agricultural trade has neither experienced a change in techniques of marketing nor the improvement in the marketing conditions of the majority of the farmers. This failure is mainly attributed to the non-adoption of an integrated market development policy and to the lack of positive and facilitating role on the part of the government. The present study, overwhelmingly, shows that markets of Araria district are integrated spatially while temporal (seasonal) fluctuations are pronounced in the arrivals and prices of agro-commodities, however, government controlled regulated markets show some positive impact on improvement of the overall marketing system. The need, therefore, is to supplement the scheme

of modernization of agricultural marketing through a well-designed 'integrated market development policy' comprising all the measures as suggested above, in improving the existing structure of market, its functions and performance. Any strategy for the overall development of agriculture appears ineffective, in the absence of an efficient integrated farming marketing system, in the study area in particular and in the country in general.

SPATIO-TEMPORAL PATTERNS OF AGRICULTURAL MARKETING: A CASE STUDY OF ARARIA DISTRICT (BIHAR)

THESIS

SUBMITTED FOR THE AWARD OF THE DEGREE OF

Doctor of Philosophy

IN

GEOGRAPHY

BY

MD. MINHAJUL HODA

UNDER THE SUPERVISION OF

DR. NIZAMUDDIN KHAN

DEPARTMENT OF GEOGRAPHY
ALIGARH MUSLIM UNIVERSITY
ALIGARH (INDIA)

2005

DEDICATED TO THE FARMERS OF

ARARIA DISTRICT

Dr.Nizamuddin Khan
Sr.Lecturer

DEPARTMENT OF GEOGRAPHY
ALIGARH MUSLIM UNIVERSITY
ALIGARH – 202 002, INDIA

CERTIFICATE

This is to certify that Mr. Md. Minhajul Hoda has completed his research work for the award of Ph.D. degree under my supervision. The thesis is entitled "**Spatio-Temporal Patterns of Agricultural Marketing: A Case Study of Araria District (Bihar)**". This work is an original contribution to knowledge in the field of marketing geography and in my opinion it is fit for submission and evaluation.

Nizamuddin Khan
(Supervisor)

Phone no-0571-3092820 Mobile no-+91-9358208340 E-mail-nizamuddin_khan@rediffmail.com

ACKNOWLEDGEMENT

I consider myself to be abled to complete this work satisfactorily with the grace and mercy of Almighty ALLAH.

I wish to express my sincere thanks and deep sense of gratitude to My Supervisor **Dr. Nizamuddin Khan**, Senior Lecturer, Department of Geography, A. M.U., Aligarh, for his generous inspirations, invaluable suggestions and scholarly guidance which helped me in completion of this thesis. I am deeply indebted to **Prof. Salahuddin Qureshi**, Chairman, Department of Geography, A.M.U., Aligarh, for providing me all necessary facilities in the department to carry out this work and for his valuable suggestions throughout my research work.

I am highly thankful to Prof.K.Z.Amani, Prof. A. L. Singh, Prof. Ali Mohammad, Prof. Azimuddin Qureshi, ex-chairmen Department of Geography, Dr. Ateeque Ahmad, Dr. S. Naushad Ahmad, Readers, Department of Geography, Dr. Najmul Islam Hashmi. Dr. Shahab Fazal and Mr. Jabir Hassan Khan, Lecturers, Department of Geography, A.M.U., Aligarh, for their kind cooperation and valuable suggestions during my research work. My thanks are also due to Ms.Talat Kaneez Fatima, seminar in charge, Department of Geography and Ms. Darakhshan Noor, seminar in charge, Department of Post Harvest, Institute of Agriculture, library staffs at Maulana Azad Library, and Department of Agricultural Economics, A.M.U., Aligarh for providing me all the relevant literature whenever needed.

I am thankful to all the teaching and the non-teaching staffs of the Department of Geography and to all my friends including Mr.Shahid Pervez, Mr. Mumtaz Ahmad, Dr. Manish Semwal, Dr. Ishwarjeet Singh and Dr.Sarfraz Asghar for their valuable cooperation and help rendered to me. I will be failing in my duties if I do not acknowledge Dr. Yasir Sayeed Hanfi, Mr. Ahmad Mujtaba Siddiqui, Dr. Nuruzaman, Mr. Mazhar Khan, Dr. Shafiqullah, Mr. Alim Akhtar, Dr. Masiullah Khan, Mr.Mujeebur Rehman, Dr. Kausar Shamim, Dr. Mukammil Hussain, Mr. Asif Iqbal, Ms Sanober Naheed, Ms Fatima Mehar Sultana and Ms. Zeba Siddiqui, for their help in compilation of my research work.

Last, but not least I am very much grateful to all my family members who have always been a source of inspiration for me throughout my higher academic pursuits.

Aligarh
April, 2005

Md.Minhajul Hoda

CONTENTS

	Page No.
Acknowledgement	i
List of Figures	vi-viii
List of Tables	ix
Chapter 1 INTRODUCTION	**1-25**
1.1 Statement of the Problem	1
1.2 Significance of the Study	3
1.3 Objectives of the Study	4
1.4 Hypotheses	5
1.5 Methodology of Research and Data Collection	6
1.6 Study Area	7
1.7 Review of Literature	8
1.8 Chapter Design	19
Chapter 2 ARARIA DISTRICT : A GEOGRAPHICAL OUTLOOK	**26-54**
2.1 Location	26
2.2 Physical Profile	28
2.2.1 Relief and Structure	28
2.2.2 Drainage System	30
2.2.3 Climate	32
2.2.4 Soil	33
2.2.5 Vegetation	34
2.3 Demographic Profile	36
2.3.1 Distribution and Density of Population	37
2.3.2 Growth of Population	39
2.3.3 Sex-Ratio	41
2.3.4 Literacy	43
2.3.5 Urban Population	43
2.4 Agricultural Economy	44

2.4.1	Land use	44
2.4.2	Cropping Intensity	45
2.4.3	Cropping Pattern	46
2.4.4	Animal Husbandry	48
2.5	Non-Agricultural Economy	48
2.5.1	Transportation	50
2.5.2	Distribution of Markets Centers	52
Chapter 3	**AGRICULTURAL MARKETING: AN OVERVIEW**	**55-85**
3.1	Agricultural Marketing: An Introduction	55
3.2	Situation of Agricultural Marketing in Bihar: An Assessment	60
3.3	Cooperative Agricultural Marketing System	63
3.4	Regulation of Agricultural Marketing: Administrative Measures	64
3.5	Agricultural Marketing: A Historical Perspective	68
3.6	Agricultural Marketing Through the Five Year Plans	72
3.7	State Intervention: A Step Forward	76
3.8	Private Trade: Role and Relevance	77
3.9	Cooperative Marketing: Future Prospect	81
Chapter 4	**SYSTEM OF AGRICULTURAL MARKETING: ARARIA DISTRICT**	**86-111**
4.1	Introduction	86
4.2	The Nature of Agriculture Trading System	87
4.2.1	Private Trading System (Informal Agencies)	87
4.2.2	Public Trading System (Formal Agencies)	89
4.3	Methods of Transaction of Agricultural Products	99
4.4	Market Functionaries	101
4.5	Marketing Channels of Agricultural Products	105
4.5.1	Marketing Channels For Paddy/Rice	105
4.5.2	Marketing Channels for Wheat	106
4.5.3	Marketing Channels for Maize	108
4.5.4	Marketing Channels for Pulses	109
4.5.5	Marketing Channels for Potato and Onion	110

Chapter 5	**SPATIO-TEMPORAL PATTERNS OF MARKETED SURPLUS**	**112-148**
5.1	Introduction	112
5.2	Spatial Patterns of Marketed Surplus of Agricultural Commodities	113
5.2.1	Marketed Surplus of Agricultural Commodities in the Sampled Markets of Araria District	115
5.2.2	Marketed Surplus of Rice in the Sampled Markets	116
5.2.3	Marketed Surplus of Wheat in the Sampled Markets	117
5.2.4	Marketed Surplus of Maize in the Sampled Markets	117
5.2.5	Marketed Surplus of Pulses in the Sampled Markets	118
5.2.6	Marketed Surplus of Potato and Onion in the Sampled Markets	120
5.3	Seasonal Arrival Patterns of Agricultural Commodities	121
5.3.1	Seasonal Arrival Pattern of Rice	122
5.3.2	Seasonal Arrival Pattern of Wheat	124
5.3.3	Seasonal Arrival Pattern of Maize	125
5.3.4	Seasonal Arrival Pattern of Pulses	128
5.3.5	Seasonal Arrival Pattern of Potato	128
5.3.6	Seasonal Arrival Pattern of Onion	130
5.4	Growth of Marketed Surplus of Agricultural Produce	132
5.4.1	Growth of Marketed Surplus of Rice	135
5.4.2	Growth of Marketed Surplus of Wheat	135
5.4.3	Growth of Marketed Surplus of Maize	136
5.4.4	Growth of Marketed Surplus of Pulses	139
5.4.5	Growth of Marketed Surplus of Potato	140
5.4.6	Growth of Marketed Surplus of Onion	140
5.5	Village Level Marketed Surplus of Agricultural Commodities	142

Chapter 6 SPATIO-TEMPORAL PATTERNS OF PRICE STRUCTURE AND MARKETING COSTS **149-191**

6.1 Introduction 149

6.2 Cropping Seasons 150

6.3 Price Structure of the Agricultural Commodities 151

6.3.1 Wholesale Purchase and Wholesale Sale Prices 151

6.3.2 Wholesale Purchase and Wholesale Sale Prices of Rice 151

6.3.3 Wholesale Purchase and Wholesale Sale Prices of Wheat 155

6.3.4 Wholesale Purchase and Wholesale Sale Prices of Maize 157

6.3.5 Wholesale Purchase and Wholesale Sale Prices of Pulses 160

6.3.6 Wholesale Purchase and Wholesale Sale Prices of Potato 162

6.3.7 Wholesale Purchase and Wholesale Sale Prices of Onion 165

6.4 Marketing Costs of the Agricultural Commodities 169

6.4.1 Market Charges 171

6.4.2 Transportation Cost 172

6.4.3 Market Fee 174

6.4.4 Commission (Arhat) 176

6.4.5 Brokerage (Dalali) 176

6.4.6 Handling Costs 176

6.5 Price Spread of the Agricultural Commodities 177

6.5.1 Producer's Share in Consumer's Price 180

6.5.2 Net Price Received by the Producer 189

Conclusion and Suggestions **192-208**

Glossary **209**

Appendices **210-214**

Bibliography **215-226**

LIST OF TABLES

Fig No.	Title	Page No.
2.1	Administrative Divisions of Araria District (2001)	26
2.2	Area under Forests in Araria District (2001-2002)	36
2.3	Block- wise Distribution of Population and its Density in Araria District (2001)	37
2.4	Growth of Population in Araria District (1951-2001)	39
2.5	Block-wise Growth of Population in Araria District (1991-2001)	41
2.6	Block-wise Distribution of Sex-Ratio in Araria District (2001)	41
2.7	Block-wise Distribution of Literacy in Araria District (2001)	43
2.8	Block-wise Rural-Urban Population in the Araria District (2001)	44
2.9	Land-use in Araria District (2001-2002)	45
2.10	Cropping Intensity in Araria District (2001-2002)	46
2.11	Area Under Different Crops in Araria District (2001-2002)	49
2.12	Block -wise Distribution of Transport Facilities in Araria District (2001-2002)	52
4.1	Purchase of Major Agricultural Commodities by Different Agencies in Araria District (2002-2003)	88
4.2	Agricultural Products Marketed at Different Stages in Araria District (2002-2003)	90
5.1	Spatial Patterns of Marketed Surplus of Agricultural Commodities in the Sampled Market Centers of Araria District (2002-2003)	115
5.2	Proportion of Individual Crop in the District's Marketed Surplus in the Sampled Market Centers of Araria District (2002-2003)	118
5.3	Proportion of Marketed Surplus of Different Crops at the Individual Market (2002-2003)	119
5.4	Seasonal Variations in Arrival of Major Crops in the Araria District (2002-2003)	121
5.5	Seasonal Arrival Pattern of Rice in the Sampled Markets of Araria District (2002-2003)	123
5.6	Seasonal Arrival Pattern of Wheat in the Sampled Markets of Araria District (2002-2003)	125
5.7	Seasonal Arrival Pattern of Maize in the Sampled Markets of Araria District (2002-2003)	126
5.8	Seasonal Arrival Pattern of Pulses in the Sampled Markets of Araria District (2002-2003)	127
5.9	Seasonal Arrival Pattern of Potato in the Sampled Markets of Araria District (2002-2003)	129
5.10	Seasonal Arrival Pattern of Onion in the Sampled Markets of Araria District (2002-2003)	130

5.11	Growth of Marketed Surplus of Selected Agricultural Commodities in the Sampled Markets of Araria District (1993-2003)	133
5.12	Growth of Marketed Surplus of Rice in the Sampled Markets (1993-2003)	134
5.13	Growth of Marketed Surplus of Wheat in the Sampled Markets (1993-2003)	136
5.14	Growth of Marketed Surplus of Maize in the Sampled Markets (1993-2003)	137
5.15	Growth of Marketed Surplus of Pulses in the Sampled Markets (1993-2003)	138
5.16	Growth of Marketed Surplus of Potato in the Sampled Markets (1993-2003)	139
5.17	Growth of Marketed Surplus of Onion in the Sampled Markets (1993-2003)	141
5.18	Village level Marketed Surplus of Agricultural-Commodities According to Size of Land Holding in Araria District (2002-2003)	142
5.19	Village level Marketed Surplus of Rice According to Size of Land Holding	143
5.20	Village level Marketed Surplus of Wheat According to Size of Land Holding	143
5.21	Village level Marketed Surplus of Maize According to Size of Land Holding	144
5.22	Village level Marketed Surplus of Pulses According to Size of Land Holding	144
5.23	Village level Marketed Surplus of Potato According to Size of Land Holding	144
5.24	Village level Marketed Surplus of Onion According to Size of Land Holding	145
6.1	Seasonal Pattern of Price of Rice in Araria District (2002-2003)	153
6.2	Seasonal Pattern of Price of Wheat in Araria District (2002-2003)	156
6.3	Seasonal Pattern of Price of Maize in Araria District (2002-2003)	159
6.4	Seasonal Pattern of Price of Pulses in Araria District (2002-2003)	161
6.5	Seasonal Pattern of Price of Potato in Araria District (2002-2003)	164
6.6	Seasonal Pattern of Price of Onion in Araria District (2002-2003)	166
6.7	Pattern of Transport Cost paid by Farmers /Sellers in Araria District (2002-2003)	173
6.8	Pattern of Market Costs Paid by Sellers/Farmers and Purchasers in Araria District (2002-2003)	175
6.9	Producer's Share and Marketing Margins of Important Crops in the Markets of Araria District (2002-2003)	181
6.10	Marketing Costs and Returns of Rice through Different Marketing Channels in Araria District (2002-2003)	185

6.11	Marketing Costs and Returns of Wheat through Different Marketing Channels in Araria District (2002-2003)	186
6.12	Marketing Costs and Returns of Maize through Different Marketing Channels in Araria District (2002-2003)	187
6.13	Marketing Costs and Returns of Pulses through Different Marketing Channels in Araria District (2002-2003)	188
6.14	Marketing Costs and Returns of Potato through Different Marketing Channels in Araria District (2002-2003)	189
6.15	Marketing Costs and Returns of Onion through Different Marketing Channels in Araria District (2002-2003)	190

LIST OF FIGURES

Fig No.	Title	Page No.
2.1	Araria District : Administrative Divisions	27
2.2	Araria District : Relief	29
2.3	Araria District : Drainage System	31
2.4	Araria District : Percentage of Forest Area to Total Area (2002)	35
2.4	Araria District : Density of Population (2001)	38
2.6	Araria District : Growth of Population (1991-2001)	40
2.7	Araria District : Sex Ratio 2001	42
2.8	Araria District : Transport Net Work	51
2.9	Araria District : Location of Markets (2002)	53
4.1	Proportion of Paddy Marketed at Different Stages in Araria District (2002-2003)	92
4.2	Proportion of Rice Marketed at Different Stages in Araria District (2002-2003)	93
4.3	Proportion of Wheat Marketed at Different Stages in Araria District (2002-2003)	94
4.5	Proportion of Maize Marketed at Different Stages in Araria District (2002-2003)	95
4.6	Proportion of Pulses Marketed at Different Stages in Araria District (2002-2003)	96
4.7	Proportion of Potato Marketed at Different Stages in Araria District (2002-2003)	97
4.8	Proportion of Onion Marketed at Different Stages of Araria District (2002-2003)	98
4.9	Marketing Channels for Paddy/Rice	106
4.10	Marketing Channels for Wheat	107
4.11	Marketing Channels for Maize	108
4.12	Marketing Channels for Pulses	109
4.13	Marketing Channels for Potato/Onion	110
5.1	Araria District : Sampled Markets 2003	114
5.2	Seasonal Variations in the Arrival of Major Crops in the Araria District (2002-2003)	122

CHAPTER-1
INTRODUCTION

1.1 Statement of the Problem

The role of an efficient agricultural marketing system as a key component for accelerating agricultural production and thereby promoting economic growth in developing countries is now widely accepted. In the past, more emphasis was given to the increase of agricultural production throughout the country under hectarage expansion and improvement in productivity. Issues related with marketing of agro-commodities have usually taken a secondary place. Government is now increasingly becoming aware that agricultural production and marketing are two sides of the same coin.

In India, there is widespread belief among the producers of agricultural commodities that the farming activities, especially, the production of various kinds of food grains have become uneconomic and non-remunerative. Because the ratio of production cost and output price is expanding year after year due to removal of subsidies from agricultural inputs and insufficient marketing facilities available at the time of harvest of crops. Further, a relatively larger margin of middlemen in the consumer's price of various agro-products is also a common feature, which reflects exploitative nature of oligopolistic and semi-monopolistic practices in agricultural trade, making farmers handicapped. Large seasonal fluctuations in arrivals and prices of the agro-products are another expression of an inefficient marketing system.

The study of actual performance of agricultural marketing, in India in general and in Bihar in particular, however, remains a neglected area about which a concrete and rational understanding has not been developed. Past studies have given only a general description of prevailing marketing systems for transaction of different commodities in distinct areas. No doubt, some sporadic attempts were made to discuss and analyze the role of regulated markets and rural markets in

transaction process of farm products. The price distribution at different levels of a marketing channel, estimation of marketable and marketed surplus of different commodities and so on are found to be main themes of the past studies. But all these efforts at academic as well as government levels are very much influenced by an economist's macro-level economic understanding of the problem. Thus most of these studies have economic overtones and emphasis. The study of agricultural marketing system in geography deals with micro-level spatial inquiry of agricultural markets. It takes into consideration physical, socio-economic and political factors etc which affect markets and its different aspects. Because the agricultural practices/production and behaviour of marketing of the farm products are the combined effect of space-time and socio-economic attributes of the given geographical area.

The relevance of geographical enquiry of agricultural marketing system is very obvious. The marketing as a process does exist in the geographical space as market centres. The effectiveness of this process is reflected in the various spatial characteristics of market centres, viz. their size, network, connectivity, extent etc. The spatial efficiency, integration, accessibility, expansion and availability of amenities at market centres depend upon location of these centres. Thus the spatial system of market is affected by all the factors physical, social as well as cultural, which interplay at local level. The effect of this local interplay of factors spreads to higher level of spatial hierarchy of markets. Ultimately the economic process and efficiency of the markets are affected by this spatial characteristic of market centres.

A systematic study of the nature of marketable and marketed surplus in spatio-temporal framework with reference to backward and agriculturally sensitive regions needs to be understood to help in policy

making. It is because population of backward region mainly subsists on agriculture and its allied activities. The typical characteristics of Indian agriculture have been the pre-dominance of marginal and small farmers with tiny plots and heavy pressure per unit of land, lower level of productivity and so on. As a result there is highest distress sale and low prices during post-harvest period, while during lean period low arrival of marketed surplus results in high prices of agricultural commodities. The elimination of these problems needs proper policies and their implementation.

1.2 Significance of the Study

The nature of the study selected for research work is of academic as well as of applied importance. Academically, it is going to help in creating new insight to understand agro-marketing in spatio-temporal framework. On the other hand at policy level it would generate data for accurate estimation of existing problem. The study area is essentially an agrarian economy belonging to flood prone region of *Kosi* plain. Climatically and economically the district is marginal in nature where a primary activity like agriculture is the only main source of livelihood for the people. The marketable surplus is meager in study area as compared to developed areas of the state. It is because of physical and socio-economic characteristics of the study area. Moreover, the farmers who are selling their marketable surplus in the market centres are not in position to get better price, as a result of which they have remained poor. It has affected the economy of study area in particular and Bihar in general.

An efficient movement of farmers' surplus to consumers will raise their income level and will promote the economic development of study area. The farmers would allocate their comparative advantage to invest on modern agricultural inputs to obtain the enhanced productivity

and production. This, in turn, would contribute to an increasing marketable/marketed surplus of agricultural commodities and inter-regional trade. This would ultimately increase the demand for improved market facilities as a whole.

However, before formulating any such policies to meet these problems, it seems necessary to find out the marketing conditions under which surpluses are disposed off in the market spatially and temporally. Further, it is necessary to identify and quantify the marketing costs and margins that determine efficiency of agricultural marketing system, so that the improvements can be directed towards those factors which are crucial in determining market efficiency. This research problem has its genesis in the observation of general neglect of these issue related with marketable/marketed surplus, and inefficient pattern of agricultural marketing in the region of North Bihar. An understanding of all these factors in a backward and agriculturally sensitive region will provide substantial empirical evidences for the market planners and policy makers to formulate such policies which will be of immense help in increasing agricultural marketing efficiency.

An attempt is made to analyze these problems in the present study. Based on empirical evidence of the study area an attempt is also made to suggest some improvement in the exiting agricultural marketing system through a well designed 'integrated market development policy'.

1.3 Objectives of the Study

The discussion and review of literature of the studies regarding agricultural marketing system of both the developed and developing countries has motivated the researcher for a detail spatio-temporal analysis in an agriculturally backward region of India. With a view to understand and analyze the existing agricultural marketing system in the

study area i.e. Araria district (Bihar), the following objectives are to be understood.

(1) To understand the existing agricultural marketing system in the study area.

(2) To estimate the spatial and temporal patterns of marketed surplus of different agricultural commodities in the sampled market centres and villages.

(3) To asses the spatial and temporal patterns of price structure of different agricultural commodities in the sampled market centres.

(4) To find out the marketing costs of different agricultural commodities in the sampled market centres.

(5) To examine the difference in the prices received by the farmers and intermediaries in the market with a view to determine the nature and extent of price spread in the market.

(6) To furnish empirical evidences to market planners to help them formulate relevant and effective policies, and

(7) To suggest a new integrated market development policy for overall agricultural development of the study area.

1.4 Hypotheses

The following hypotheses have been put forward with a view to infer result regarding the discussed objectives.

(1) Seasonal fluctuations in arrivals and prices of agricultural commodities are pronounced in the agriculturally backward areas.

(2) The village level sale and distress sale are the result of small holdings and small marketable surplus.

(3) Larger is the price spread; greater is the inefficiency in the marketing system, and vice versa.

(4) Better spatial integration of market centers at different levels of a marketing channel due to efficient transportation and other infrastructural facilities reduces unnecessary spatial unevenness of marketed surplus.

(5) Government intervention in terms of regulation measures leads to higher growth of marketed surplus.

1.5 Methodology of Research and Data Collection

The present study is based on both the primary and the secondary sources of data. Primary data have been generated from three tier marketing agencies i.e. village level, periodic market and regulated market. They represent the major components of agro-marketing system in Araria district. Six per cent (45) of total villages and 10 per cent (20) of total periodic markets have been selected on the basis of stratified random sampling technique for detail enquiries. 100 per cent regulated markets (02) are also selected for the survey. The reason is, they are government controlled, and represent regulated agriculture markets in each district of every province of the country. Further, 10 per cent of producer sellers in all sampled periodic and regulated agriculture markets and 50 households of each sampled village have been selected on the basis of stratified random sampling techniques. They have been thoroughly interviewed for relevant enquiries regarding the various aspects of research problem. Besides, seven more periodic markets, based on some specific consideration like distance from road, location in an urban centre or along the canal and so on, are also being included in the sampled markets. Only six major crops rice, wheat, maize, pulses, potato and onion have been taken into consideration in the present study programmes. The criteria of selection of crops are based on their hectarage, production and quantities of marketable and marketed surplus in the markets.

All the sampled villages were visited before conducting actual survey. In this preliminary survey list of households was prepared and village inhabitants were classified on the basis of size of landholding, i.e. marginal, small, medium and big farmers. Keeping in view total 50 households in each of sampled villages, farmers belonging to different categories according to size of land holding were selected in the

proportion, following stratified random sampling technique. The researcher enquired from them about market participants' socio-economic behaviour at the time of agricultural transaction, mode and volume of transactions of commodities and their specific market channels, and the spatio-temporal patterns of market transaction of agro-products and that of the traders in sampled markets and villages.

In addition to primary data, the study is also based on secondary sources of data which have been collected mainly from the following sources.

(1) Census Office Patna.

(2) District Statistical Office Araria/Purnea.

(3) Agricultural Marketing Office Araria.

(4) District Council (Zila Parisad) Office Araria.

The collected data have been processed and brought in to tabular forms. These processed data are analyzed by using simple statistical techniques especially percentage method with a view to derive some specific conclusion regarding spatio-temporal patterns of agricultural marketing of Araria district.

1.6 Study Area

Owing to difficulty in collection of the primary data regarding the marketed surplus and price structure at wider scale the researcher, selected a micro-level region, "*Araria district,*" as the study area. It lies in the extreme eastern part of Bihar along the border of Nepal. It is located between 25° 56′ North and 26° 35′ North latitudes and between 87° 3′ East and 87° 42′ East longitudes, in which 2124831 people inhabit over 2830 sq. kms. area. The study area is divided into 2 sub-divisions and 9 community development blocks for administrative convenience.

Agriculture is the main economic activity in the district. Net-sown area occupies about 65.76 per cent of the total reported area of the district. There are three cropping seasons viz., *Rabi, Kharif* and *Zaid*. The main crops are paddy, wheat and maize occupying more than 70 per cent of gross cropped area. Besides, jute, pulses, oilseeds, vegetables and fruits are also cultivated with varying amount of hectarage and production. Animal husbandry is also practiced as a supplementary occupation to agriculture.

The study area has 751 inhabited villages 3 towns, 2 regulated markets and 198 rural periodic markets. Industrially the region is very backward. Cottage and small-scale industries based on forest and agriculture products are the main features. Transportation network is not well developed in the area. Metalled roads approach only 33.73 per cent villages and 25.13 per cent villages have power supply.

1.7 Review of Literature

The study of agricultural marketing is a new off-shoot of the main stream geographical sciences. During 20th century there has been a significant and growing interest in the study of market place, exchange system and the mechanism and process of transaction of agricultural commodities. But most of these studies have been done by economists, commercialists and anthropologists with their own approaches, that too, in a limited sense. The study of agricultural marketing and markets from geographers' perspective is found to be negligible. William Applebaum[1], identified a new sub-field known as marketing geography during early 1950's. He defines that marketing geography is concerned

---

[1] Applebaum, W. (1954), Marketing Geography, in James, P.E and C.F.Jones (eds.) *American Geography Inventory and Prospects*, Syracuse University, pp.245-51.

with the delimitation and measurement of the markets with channels of distribution through which goods move from producer to consumer.

Geographers' contribution is limited to the study of periodic, urban, retailing, wholesaling, as well as regular markets. Large number of studies have been undertaken by geographers like by Hodder (1965)[1], Skinner (1965)[2], Berry (1967)[3], Ambrose (1968)[4], Garner (1970)[5], Mulvihill (1970)[6], Smith (1972)[7], Symnaski (1974)[8],Hay (1979)[9], Dixit (1984)[10], Srivastava (1984)[11], Saxena (1990)[12], Khan(1991)[13],

---

1 Hodder, B.W. (1965), Distribution of Markets in Yarubaland, *Scottish Geographical Magazine*, Vol. 81, pp.48-58.

2

3 Berry,B.J.L. (1967), *Geography of Market Centers and Retail Distribution*, New Jersey.

4 Ambrose, P.J. (1968), An Analysis of Intra-urban Shopping Pattern, *Town Planning Review*, Vol.38, pp-327-34.

5 Garnier, B. J and Delobez, A. (1979), *Geography of Marketing*, Longman.

6 Mulvihill, D.E & Mulvihill, R. C. (1976), *Geography, Marketing and Urban Growth*, Vannostark Reinhold, New York.

7 Smith, R. H.T. (1972), The Synchronization of Periodic Market in W.P Adams & F. M. Halleiner (eds) *International Geography*, Toronto, Vol.1, pp.591-93.

8 Symnaski, R. (1974), Complex Periodic Market Cycle, *Annals of Association of American Geographers*, Vol. 64, pp. 203-213.

9 Hay, A.M. (1977), Notes of Economic Basis for Periodic Marketing in Developing Countries, *Geographical Analysis*, Vol. 3, pp.72-79.

10 Dixit, R.S. (1984), *Market Centers and their Spatial Development in the Umland of Kanpur*, Kitab Mahal, Allahbad.

11 Srivastava, V.K. (1984), Progress of Marketing Geography in India, *Indian Journal of Marketing, Geography*, Vol. 2, (1-2), pp.1-18.

12 Saxena, H.M. (1990), *Marketing Geography*, Rawat Publications, Jaipur.

13 Khan, N. (1991), *Agricultural Development and Marketing*, H.K, Publisher and Distributors.

Bidikar (2002)[1] and Sexana (2003)[2]. No doubt some basic concepts of marketing envisaged in these early studies, definitely provide a base for the analysis of agricultural marketing/markets system.

With the establishment of the International Geographical Union (IGU), a working group on market distribution system/market place-exchange system (1972–73), the study of marketing activities in geography has been accelerated, not only in developed countries, but also in developing countries like India. The pace of development has been very rapid during the eighties of the twentieth century. This Study Group was transformed into Study Group of Commercial Activities in France IGU summit in 1988. Afterwards this group was developed as IGU Commission on Commercial Activities in 1993 and in Hague summit (1996) it was restructured and named as study group on Globalization of Retailing. At present this study group is continued as IGU commission of Globalization of Retailing. Thus, the field and scope of marketing geography has widened to a very large and considerable extent.

In the universities of the United States, several doctoral researches have been done on the theme 'Food and Agricultural Marketing in Developing Countries' (An Annotated Bibliography of Doctoral Research in the Social Sciences, 1969-79 by Peter Riley and Michael T. Weber, Michigan), but most of these studies are unpublished.

---

1 Bidikar, A.S. (2002), *Spatial Analysis of Market Centers in Drought Prone Areas: A Case Study of Bijapur District*, unpublished thesis submitted to Karnataka University, Dharwad.

2 Saxena, P. (2003), *Marketing and Sustainable Development,* Rawat Publications, Jaipur.

A few studies conducted by international organizations like Food and Agricultural Organisation (F.A.O), Food Research Institute and German Foundation for International Development are notable. Food and International Organization has published several articles in its journal like Food Marketing System in Asian Cities (1975)[1], Planning and Operation of Wholesale Markets, Development of Food Marketing System for Large Urban Areas (1973)[2], Agricultural Marketing in Iraq (Martin 1981)[3], Marketing Improvement in Developing Countries (1986), etc. Two notable articles are Measuring the Effectiveness of Agricultural Marketing in contributing to Economic Development[4] and Regional Analysis and Agricultural Marketing Research in Tropical Africa[5] which have been written by William D. Jones. A working paper entitled, Agricultural Food Marketing in Socio-Economic Development by Lorenzl (1978)[6] has been published by German Foundation for International Development.

A number of works have been done on agricultural marketing, especially in developing countries. Proceedings of INCOMES, Vol. I entitled, Marketing System for Developing Countries' (Izraili, Izraili, and Messner)[7] has provided background for study of agricultural

---

1 F.A.O. (1975,) *Food Marketing System in Asian Cities*, Bangkok.

2 F.A.O. (1973), *Development of Food Marketing System for Large Urban Areas*, Rome.

3 F.A.O. (1981), *Agricultural Marketing in Iraq*, by Martin, K. Rome.

4 Jones, W. D. (1970), Measuring the Effectiveness of Agricultural Marketing in Contribution of Economic Development: Some African Examples, *Food Research Institute Studies*, Vol.9, No.3, pp.175-96.

5 Jones, W. D. (1974), Regional Analysis and Agricultural Marketing in Tropical Africa : Concepts and Experience. *Food Research Institute Studies*, Vol.13, p.3-28.

6 Lorenzl, G. (1978), *Agricultural and Food Marketing in Socio-economic Development*-A working paper, German Foundation for International Development, Buslin.

7 Izraili, D., Izraeli,D.N and Messner, F. (1976), *Agricultural Marketing in Developing Countries,* INCOMAS Proceedings, Vol I & II, John Wiley, New York.

markets. Similarly Bucklin's (1970) Vertical Marketing System is also a useful study on marketing in various socio-economic regions of the world. Carol. A. Smith (1976)[1] has contributed several articles on marketing from an anthropological point of view. She has also edited a volume entitled 'Regional Analysis' which contains some articles on Agricultural Marketing. Markets and Marketing in Developing Economies (Moyer & Hollander, eds 1968)[2] have papers related to various aspects of marketing including agricultural marketing.

The contribution of Barbara Harriss in the field of agricultural marketing is most notable. Her important works are Regulated Food Grain Markets-A Critique, Role of Punjab Markets as Growth Centers (1974)[3], The Distribution of Agricultural Mercantile Power in Tamil Nadu (1981), Agricultural Markets and Inter-sectoral Resource Transfer (1985)[4] etc. Her book on State and Market (1983)[5] and working paper on How to Study Agricultural Marketing and How Not to Study it (Madras Inst of Dev. Studies)[6] are the classical works useful for geographical study. She deals with the spatial distribution, size and structure of *mandies*. The author has successfully distinguished the central place hierarchies. Problems related to shape and sizes of tributary areas are discussed. A few other studies done by foreign

---

1 Smith, C .A. (1976), *Regional Analysis*, Vol. I, Economic System, Academic Press, New York.

2 Moyer, R & Hollander, S.C. (eds) (1968), *Markets and Marketing in Developing Economics*, Ricgard D.Irwin, Homewood, Illinois.

3 Harriss, B. (1974), The Role of Punjab Wheat Markets as Growth Centers, *Geographical Journal*, Vol.140, pp.52-72.

4 Harriss, B. (1985), Markets and Inter-Sectoral Resource Transfer, Proceedings of the inst. Workshop on Agri- Marketing in Semi-arid Tropics.

5 Harriss, B. (1983), *State and Market*, Concept, New Delhi.

6 Harriss, B. (1985), *How to Study Agricultural Marketing and How Not to Study it,* working paper No.7, Madras Inst. of Dev. Studies.

scholars are State Control of Marketing in Developing Countries (Bauer,1976)[1]. Marketing Agricultural Commodities in Pichincha Province, Ecuador (V. A. Smith,1975)[2] Marketing of Agricultural Products in Punjab (Pakistan) (Yasin, 1976)[3], Farmers and Traders in Hauseland (Clough, 1981), the Food Marketing Systems in China (Chong-Yeong, Lee1982)[4]. All these studies highlight the system of agri-marketing and its effects on farming communities in developing countries.

However, during last decade a large number of work regarding agricultural marketing in developing countries have been done. Marketing Reforms, Market Development and Agricultural Production in China (Weersink, A. and Rozelle, S., 1997)[5], Middlemen and Peasants in Rice Marketing in the Philippines (Hayami et al 1999)[6], Structural Changes in the Demand for food in Asia (Huang, J. and Bouis, H., 2001)[7], The Role of Intermediaries in Enhancing Market Efficiency in the Ethiopian Grain Market (Gabre, 2001)[8] deserve for

---

1 Bauer, P.T. (1976), State Control of Marketing in Developing Countries, p.30-34, in Izraeli et al (eds). *Agricultural Marketing for Developing Countries*, INCOMAS, Vol.II, John Wiley, New York.

2 Smith,V.A.(1975), Marketing Agricultural Commodities in Pichincha Province, Ecuador, *Geographical Review*, Vol.65,pp.353-63.

3 Yasin, G. (1976), *Marketing of Agricultural Products in Punjab*, Punjab Board of Economic Inequality, Lahore.

4 Chong-Y, L. (1982), The Food Marketing System in China: with Particular Reference to the Shang-Hai Area, *Journal of Rural Development*, Vol. 5, pp.91-107.

5 Weersink, A. and Rozelle, S. (1997), Marketing Reforms, Market Development and Agricultural Production in China. *Agricultural Economics*, Michigan

6 Hayami, Y et al (1999), Middlemen and Peasants in Rice Marketing in the Philippines, *Agricultural Economics*, Michigan.

7 Huang, J. and Bouis, H. (2001), Structural Changes in the Demand for Food in Asia *Agricultural Economics*, Michigan.

8 Gabre, M. (2001), The Role of Intermediaries in Enhancing Market Efficiency in the Ethiopian Grain Market, *Agricultural Economics*, Michigan

special consideration in pursuing the study of agricultural marketing system in 21st century. All these studies are generally concerned with the effects of structural reforms under the World Trade Organization (W.T.O). Besides, farmers' response to the new policies adopted in developing world has also been taken into consideration.

Let us see how Indian Scholars have studied the agricultural marketing system. It is true for India that geographers' contribution in the study of agricultural market/marketing is negligible. Thus, it is a new field of geographical research. Since this field of enquiry is inter-disciplinary in nature, one must consult all those studies which have been done by economists or commercialists as well.

The studies on the market efficiency in general and on the functioning of regulated markets in particular are negligible. Further, academic efforts for understanding of the role and importance of agricultural marketing in the under developed countries like India, have not been undertaken seriously in the past.

After 1930 various studies came into existence, which attracted the attention of geographers towards the study of market centres. During the forties, the trade centres of Tinnevelly district and cotton markets of Tinnevelly district, agricultural marketing in the Western United Provinces (Mathur, 1941)[1] were studied by the geographers. Their contributions proved vital for the development of marketing geography.

Regarding the working of regulated markets the report of Dantwalla Committee (1950)[2] to review the working of regulated

---

1 Mathur, V.S. (1941), Agricultural Marketing in Western United Province, *Indian Geographical Journal,* Vol. 16, pp. 9–13.

2 Government of Bombay, Report of the Inquiry into Regulated Markets in Bombay State, Interim Report, 1950–51.

markets in the state and to suggest necessary changes in the legislation is significant. Marketing geography made a modest progress in India during fifties. The Directorate of Marketing and Inspection brought out a brochure in 1956[1], to compile the marketing legislation in force in various states.

During sixties and seventies marketing geography made remarkable progress in India. Singh (1962)[2] presented an excellent work on the study of rural and urban market centres in Eastern U.P. A seminar was organized on "Marketing of Agricultural Commodities" in the year (1963) by the Indian Society of Agricultural Economics. In this seminar an attempt was made to review the progress of agricultural markets in India by Mirchandani and Hiranandani[3]. The study conducted by V.R. Joshi on "Regulated Markets in Gujarat" (1966)[4] revealed that the Market Acts in Gujarat state did not remove the obstacles in the formation of regulated markets. The studies on marketing efficiency were made by Jasdanwala (1966)[5], Cummings (1967)[6] and Holmes (1969)[7]. These studies concluded that Indian

---

1 Government of India (1956), Directorate of Marketing and Inspection, Working of Regulated Markets in India, Regulated Markets, Vol. 1, Legislation, Nagpur.

2 Singh, K.N. (1962), *Rural Markets and Urban Centres in Eastern U.P, Geographical Analysis,* Ph.D. Thesis Unpublished, B.H.U., Department of Geography.

3 Mirchandani, R.T. and Hiranandani, G.J. (1963), Regulated Markets: Their Review and Impact on Market Structure and Efficiency, Seminar on Marketing of Agricultural commodities. *Indian Society of Agricultural Economics*, Bombay.

4 Joshi, V.R. (1966), *Regulated Markets in Gujarat,* Ph.D. Thesis, Sardar Patel University, Vallabh Vidya Nagar.

5 Zaibun, Y. Jasdanwalla. (1966), *Marketing Efficiency in Indian Agriculture*, Allied Publishers, Bombay.

6 Cummings, R.W. Jr. (1967), *Pricing Efficiency in Indian Wheat Market*, Impex India, Delhi.

7 Holmes, S. (1969) Market *Structure and Conduct and Foodgrain Pricing Efficiency in a North Indian Tehsil*, Ph.D. Thesis, University of Marry Land.

agricultural markets are fairly competitive and the existing market structure did not need any radical overhaul at the present stage of economy.

The grain market in Punjab was studied by A.S. Kahlon (1970)[1]. The study was conducted by Radhakrishnan (1971)[2] on Marketing of Cash Crops: With Special Reference to Groundnut and Cotton in Khandesh. Indian Society of Agricultural Economics organized another seminar in 1972 on "Emerging Problems in Agricultural Marketing", (Venkat Ramanayya 1972)[3].

The Government of Andhra Pradesh conducted a seminar in 1975 to review the marketing activities in the state and also issued a brochure in which projects for the development of the markets in the state were formulated. A study made by International Crop Research Institute for Semi-Arid Tropics (1976)[4] revealed that producer sellers were not only interested in selling the produce at higher prices, but also wanted to purchase their necessities at cheaper prices at market centres.

S.C. Mallick (1976)[5] made a study on "Rice Marketing in Orissa" and found that agricultural marketing lacked adequate

---

1 Kahlon, A S (1970), *Impact of Changing Conditions on Grain Marketing Institutions and the Structure of Grain Markets*, in Punjab, Punjab Agricultural University, Ludhiana

2 Radhakrishnan, V (1971), *Marketing of Cash Crops With Special Reference to Groundnut and Cotton in Khandesh*, Ph D. Thesis, Univ of Bombay

3 Ramanayya, V (1972), Emerging Problems in Agricultural Marketing, Seminar on Emerging Problems on Marketing of Agricultural Commodities, *Indian Society of Agricultural Economics*, Bombay

4 International Crop Research Institute for Semi-Arid Crops, Markets for SAT Crops in Andhra Pradesh, Hyderabad, (1976)

5 Mallick, S C (1976), *Marketing of Rice in Orissa*, Ph D Thesis, Orissa University of Agricultural and Technology

transport facilities and failed to exercise sufficient influence on price control.

B.D. Kulkarni (1977)[1] studied various aspects related with the management of regulated markets in Sholapur district. Subba Rao (1978)[2] in his study entitled "The Examination of Economic Efficiency of Paddy Marketing System at Village Level in West Godavari District of Andhra Pradesh", concluded that there were *many imperfections in marketing of paddy at village level.* Barbara Harriss (1980)[3] examined the effects of market regulation in reducing the degree of imperfections with which different markets function through time and space.

Siva Rama Prasad studied working of regulated markets in Andhra Pradesh (1982)[4] by selecting six markets on sample basis. The study made an attempt to measure the operational efficiency of market in quantitative terms.

L.P.Singh (1983)[5] made a study to examined how far regulated markets have been able to accomplish their objectives in India.

N.L.Agralwal (1986)[6] has examine the nature and measures of spatial and temporal variations in price of foodgrains,

---

1 Kulkarni, B.D. (1977), *Functioning of Regulated Markets in Sholapur District with Special Reference to Groundnut, and Bajra*, Ph.D. Thesis, Shivaji University

2 Subba, Rao .K. (1978), *Rice Marketing System and Compulsory Levies in Andhra Pradesh,* Allied Publishers Private Limited, Bombay.

3 Harriss, B (1980), Regulated Food Grain Markets, *A Critique Social Scientist.* VIII, March 8, pp. 22-31.

4 Prasad, S.(1982), *Management of Regulated Markets A study of Organizational Performance of Selected Regulated Markets in Andhra Pradesh*, Ph.D. Thesis, Andhra University, Waltair.

5 Singh, L.P. (1983), *Regulated Markets in India.* Capital Publishers, Delhi.

6 Agarwal, N.L. (1986), *Agricultural Prices and Marketing in India*, Mittal Publication, Delhi.

G. Narasimha Murthy's study (1988)[1] evaluates the performance of selected regulated markets in the backward region of Warangal district of Andhra Pradesh.

Jagdish Prasad (1991)[2] has estimated the marketable and marketed surplus of foodgrains and examined the organization of the marketing system and impact of regulatory measures on the marketing pattern of Muzaffarpur foodgrain marketing system.

M. Upender (1990)[3] estimated the acreage response of paddy as associated with the changes in prices, productivity and identified the price spread between producer's receipt and consumer's price in most important market channels of Warangal district.

Nizamuddin Khan (1991)[4] has analysed agricultural marketing system through rural markets in Faizabad district of Uttar Pradesh. He studied marketable surplus of important crops, market channels, market area, hierarchy, traders and consumers behaviour in rural market.

H.M. Saxena (1992)[5] has proposed the analysis of regulated market in terms of growth, organization, structural pattern, commodities, trade areas, market efficiency, role of market etc.

---

1 Murthy, G. N. (1988), *Regulated Market in a Rural Economy*, Ajanta Publications, Delhi

2 Prasad, J.(1991), *Marketable Surplus and Market Performance,* Mittal Publication, Delhi.

3 Upender, M. (1990), *Marketable and Marketed Surplus in Agriculture*, Mittal Publication, Delhi.

4 Khan, N. (1991), *Agricultural Development and Marketing*, H.K, Publisher and Distributors.

5 Saxena, H.M. (1992) *Regulated Agricultural Markets- A Case Study of Rajasthan*, Rawat Publications, Jaipur, Delhi.

Anita Arya (1993)[1] has pointed out the working strategy of regulated market in Gujarat and analyzed the characteristics of a competitive market, market integration, market stability, cost of buying and cost of selling, market arrival etc.

Abha Lakhsmi and Shahab Fazal (1994)[2] have discussed general conditions of the farmers of their study area and revealed that marketing facilities in the region were deplorably poor and despite of the presence of government officials, malpractices are rampant.

R.S. Dixit (2001)[3] has studied the distribution of the regulated agricultural markets of Uttar Pradesh and analyzed the theoretical patterns of regulated agricultural markets over the space of Uttar Pradesh in terms of area, population and inhabited villages. H.M. Saxena (2003)[4] explained the nature and characteristics of market place participants and their behavioural pattern in urban markets as well as agricultural markets.

1.8 Chapter Design

The present research work unfolds the various aspects of agricultural marketing of Araria district both in term, time and space. The whole study has been divided into six chapters.

---

1 Arya, A (1993) *Agricultural Marketing in Gujarat*, Concept Publishing Company, New Delhi

2 Lakshmi, A and Fazal, S (1994) Marketing of Agricultural Produce by the Farmers in Upper Ganga–Yamuna Region, India, *The Geographer*, Vol XLI, No 1

3 Dixit, R S (2001) Analysis of Spatial Distribution of Regulated Agricultural Markets, *Geographical Review of India*, Vol 63, No 2, pp 141–152.

4 Saxena, H M (2003) *Marketing Behaviour a Regional Analysis*, R B S A Publishers, Jaipur

Chapter-1st is an introductory chapter dealing with the statement of problem, concept of agricultural marketing, review of selected works done by foreign and Indian geographers as well as agricultural scientists. Besides, objectives, hypotheses, methodology, selection of the study area, significance of study have also been discussed.

The geographical outlook of the study area has been described in chapter-2nd. It deals with (a) physical profile (b) demographic profile (c) agricultural economy and (d) non-agricultural economy of the study area. The study area embodies a distinct geographical personality in term of physiography, climate, natural vegetation, soil and water bodies. It is due to its location, *Kosi* river plays an important role in designing and re-shaping the land and people relation of the region. The economic structure of the region is dominated by agricultural and its allied activities. Jute, paddy and wheat are the important crops of the region.

The chapter-3rd deals, with the overall view of agricultural marketing i.e. nature, scope, present situation, types of markets. Besides, it deals with present state of agricultural marketing in Bihar, cooperative marketing system, facilities and amenities in the regulated market, historical perspective of agricultural marketing as well as its status during various Five Years Plan, state intervention in agricultural marketing, private trade, cooperative marketing in Bihar. These topics give a holistic view of the past and present agricultural marketing system in Bihar and to certain extent of India to understand the exiting problems in agricultural production and its marketing.

Chapter-4th describes the system of agricultural marketing in Araria district. Two types of trading system (a) private trading, and (b) public trading system, have been identified. Village level transactions of different agricultural commodities to the different agencies, methods of

transaction of agricultural products, market functionaries and marketing channels of different commodities have been discussed.

Chapter-5th discusses the spatio-temporal patterns of marketed surplus in selected regulated and periodic markets of the district. This chapter has been divided into three sections. Section first is devoted to the study of the spatial patterns of marketed surplus on the basis of the size of arrival of six major commodities i.e. rice, wheat, maize, pulses, potato and onion. Section two deals with temporal patterns of marketed surplus in selected periodic and regulated markets. Seasonal patterns of marketed surplus are also discussed on the basis of average monthly transaction. Moreover, section third represents village level marketed surplus of the different marketing agencies according to size of land holding of the farmers, involved in the transactions of different agricultural commodities.

Chapter-6th is titled as 'spatio-temporal patterns of price structure and marketing costs'. The spatial and seasonal price behaviour of six selected crops has been analyzed. Different forms of price have been discussed like (a) wholesale purchase price (b) wholesale sale price and (c) retail price. It also includes the price structures. Each crop's price structure is dealt with reference to three distinct period (a) post-harvest (b) intermediate period and (c) before harvest/lean period. In the last, producers' share in consumers' price and net price received by producers through different channels have also been discussed.

In the last, the conclusion summarises the main findings of the study and highlights its importance. However, some measures have also been suggested for the improvement of agricultural marketing system in the district.

References

(1) Ambrose, P.J (1968), *An Analysis of Intra-urban Shopping Pattern*, Town Planning Review, Vol.38, pp-327-34.

(2) Applebaum, W. (1954). Marketing Geography, in James, P.E and C.F.Jones (eds.) *American Geography Inventory and Prospects*. Syracuse University, pp. 245-51.

(3) Arya, A. (1993), *Agricultural Marketing in Gujarat*, Concept Publishing Company, New Delhi.

(4) Bauer, P.T. (1976), State Control of Marketing in Developing Countries, p.30-34, in Izraeli et al (ed). *Agricultural Marketing for Developing Countries*, INCOMAS, Vol.II, John Wiley, New York.

(5) Berry,B.J.L. (1967), *Geography of Market Centres and Retail Distribution*, New Jersey.

(6) Bidikar, A.S. (2002), *Spatial Analysis of Market Centres in Drought Prone Areas: A Case Study of Bijapur District*, unpublished thesis submitted to Karnatka University, Dharwad.

(7) Chong-Y, L. (1982), *The Food Marketing System in China*: with Particular Reference to the Shang-Hai Area, Journal of Rural Development, Vol.5, pp.91-107.

(8) Cummings, R.W. Jr. (1967), *Pricing Efficiency in Indian Wheat Market*, Impex India, Delhi.

(9) Dixit, R.S. (1984), *Market Centres and their Spatial Development* in the Umland of Kanpur, Kitab Mahal, Allahbad.

(10) Dixit, R.S. (2001), Analysis of Spatial Distribution of Regulated Agricultural Markets, *Geographical Review of India*, Vol. 63, No. 2, pp. 141–152.

(11) F.A.O. (1973), *Development of Food Marketing System* for Large Urban Areas, Rome.

(12) F.A.O. (1975), *Food Marketing System in Asian Cities*, Bangkok.

(13) F.A.O. (1981), *Agricultural Marketing in Iraq*, by Martin, K. Rome.

(14) F.A.O. (1986), *Marketing Improvement in the Developing World*, By J.C Abbott, Rome.

(15) Gabre, M. (2001), The Role of Intermediaries in Enhancing Market Efficiency in the Ethiopian Grain Market, *Agricultural Economics*. Michigan.

(16) Garnier, B. J and Delobez, A. (1979), *Geography of Marketing*. Longman.

(17) Government of Bombay (1950–51), *Report of the Inquiry into Regulated Markets* in Bombay State, Interim Report.

(18) Government of India (1956). *Directorate of Marketing and Inspection Working of Regulated Markets in India*, Regulated Markets, Vol. 1, Legislation, Nagpur.

(19) Harriss, B. (1974), The Role of Punjab Wheat Markets as Growth Centres, *Geographical Journal*, Vol.140, pp.52-72.

(20) Harriss, B. (1985), *Markets and Inter-Sectoral Resource Transfer*, Proceedings of the inst. Workshop on Agi- Marketing in Semi-arid Tropics.

(21) Harriss, B. (1983), *State and Market*, Concept, New Delhi.

(22) Harriss, B. (1985), *How to Study Agricultural Marketing and How Not to Study it,* working paper No.7, Madras Inst of Dev. Studies.

(23) Harriss, B. (1980, *Regulated Food Grain Markets*, A Critique Social Scientist, VIII, March 8, pp. 22–31.

(24) Hay, A.M. (1977), Notes of Economic Basis for Periodic Marketing in Developing Countries, *Geographical Analysis*, Vol. 3, pp.72-79.

(25) Hayami, Y et al (1999), Middlemen and Peasants in Rice Marketing in the Philippines, *Agricultural Economics*, Michigan.

(26) Hodder, B.W. (1965) Distribution of Markets in Yarubaland, *Scottish Geographical Magazine,* Vol. 81, pp.48-58.

(27) Holmes, S. (1969), *Market Structure and Conduct and Foodgrain Pricing Efficiency in a North Indian Tehsil*, Ph.D. Thesis, University of Marry Land.

(28) Huang, J. and Bouis, H. (2001), Structural Changes in the Demand for Food in Asia, *Agricultural Economics*, Michigan.

(29) International Crop Research Institute for Semi–Arid Crops, Markets for SAT Crops in Andhra Pradesh, Hyderabad, (1976).

(30) Izraili, D., Izraeli,D.N and Messner, F. (1976), *Agricultural Marketing in Developing Countries,* INCOMAS Proceedings, Vol. I & II, John Wiley, New York.

(31) Jones, W. D. (1970), *Measuring the Effectiveness of Agricultural Marketing in Contribution of Economic Development*: Some African Examples, Food Research Institute Studies, Vol.9, No.3, pp.175-96.

(32) Jones, W. D. (1974), *Regional Analysis and Agricultural Marketing in Tropical Africa:* Concepts and Experience. Food Research Institute Studies, Vol.13, p.3-28.

(33) Joshi, V.R. (1966), *Regulated Markets in Gujarat*, Ph.D. Thesis, Sardar Patel University, Vallabh Vidya Nagar.

(34) Kahlon, A.S. (1970), *Impact of Changing Conditions on Grain Marketing Institutions and the Structure of Grain Markets*, in Punjab, Punjab Agricultural University, Ludhiana.

(35) Khan, N. (1991), *Agricultural Development and Marketing*, H.K, Publisher and Distributors.

(36) Kulkarni, B.D. (1977), *Functioning of Regulated Markets in Sholapur District* with Special Reference to Groundnut, and Bajra, Ph.D. Thesis, Shivaji University.

(37) Lorenzl, G. (1978), *Agricultural and Food Marketing in Socio-economic Development*-A working paper, German Foundation for International Development, Buslin.

(38) Mulvihill, D.E & Mulvihill, R. C. (1976), *Geography, Marketing and Urban Growth,* Vannostark Reinhold, New York.

(39) Moyer, R & Hollander, S.C. (eds) (1968), *Markets and Marketing in Developing Economies*, Ricgard D.Irwin, Homewood, Illinois.

(40) Mathur, V.S. (1941), Agricultural Marketing in Western United Province, *Indian Geographical Journal*, Vol. 16, pp. 9–13.

(41) Mirchandani, R.T. and Hiranandani, G.J. (1963), Regulated Markets: Their Review and Impact on Market Structure and Efficiency, Seminar on Marketing of Agricultural Commodities. *Indian Society of Agricultural Economics*, Bombay.

(42) Lakshmi, A. and Fazal, S. (1994), Marketing of Agricultural Produce by the Farmers in Upper Ganga–Yamuna Region, India, *The Geographer*, Vol. XLI, No.1.

(43) Mallick, S.C. (1976), *Marketing of Rice in Orissa*, Ph.D. Thesis, Orissa University of Agricultural and Technology.

(44) Murthy, G. N. (1988), *Regulated Market in a Rural Economy*, Ajanta Publications, Delhi.

(45) Agarwal, N.L. (1986), *Agricultural Prices and Marketing in India*, Mittal Publication, Delhi.

(46) Prasad, S. (1982), *Management of Regulated Markets: A study of Organizational Performance of Selected Regulated Markets in Andhra Pradesh*, Ph.D. Thesis, Andhra University, Waltair.

(47) Prasad, J. (1991), *Marketable Surplus and Market Performance,* Mittal Publication, Delhi.

(48) Radhakrishnan, V. (1971), *Marketing of Cash Crops*: *With Special Reference to Groundnut and Cotton in Khandesh*, Ph.D. Thesis, Univ. of Bombay.

(49) Ramanayya, V. (1972), Emerging Problems in Agricultural Marketing. Seminar on Emerging Problems on Marketing of Agricultural Commodities, *Indian Society of Agricultural Economics*, Bombay.

(50) Saxena, H.M. (1990), *Marketing Geography*, Rawat Publication, Jaipur.

(51) Saxena, H.M. (1992), *Regulated Agricultural Markets- A Case Study of Rajasthan,* Rawat Publications, Jaipur.

(52) Saxena, H.M. (2003), *Marketing Behaviour a Regional Analysis*, R.B.S.A. Publishers, Jaipur.

(53) Saxena, P. (2003), *Marketing and Sustainable Development*, Rawat Publications, Jaipur.

(54) Singh, K.N. (1962), *Rural Markets and Urban Centres in Eastern U.P, Geographical Analysis*, Ph.D. Thesis Unpublished, B.H.U., Geography Department.

(55) Singh, L.P. (1983), *Regulated Markets in India.* Capital Publishers, Delhi.

(56) Skinner, G.W. (1965), Marketing and Social Structure in Rural China, *Journal of Asian Studies*, pp. 3-43.

(57) Smith, R. H.T. (1972), The Synchronization of Periodic Market in W.P Adams & F. M. Halleiner (eds) *International Geography*, Toranto, vol.1, pp.591-93.

(58) Smith, C. A. (1976), *Regional Analysis*, Vol. I-Economic System, Academic Press, New York.

(59) Smith,V.A.(1975), Marketing Agricultural Commodities in Pichincha Province, Ecuador, *Geographical Review*, Vol.65, pp.353-63

(60) Srivastava, V.K. (1984), Progress of Marketing Geography in India, *Indian Journal of Marketing Geography*, Vol. 2, (1-2),pp.1-18.

(61) Subba, R .K. (1978), *Rice Marketing System and Compulsory Levies in Andhra Pradesh*, Allied Publishers Private Limited, Bombay.

(62) Symnaski, R. (1974), Complex Periodic Market Cycle, *Annals of Association of American Geographers*, Vol. 64, pp. 203-213.

(63) Upender, M. (1990), *Marketable and Marketed Surplus in Agriculture*, Mittal Publication, Delhi.

(64) Weersink, A. and Rozelle, S. (1997), Marketing Reforms, Market Development and Agricultural Production in China, *Agricultural Economics,*

(65) Yasin, G. (1976), *Marketing of Agricultural Products in Punjab*, Punjab Board of Economic Inequality, Lahore.

CHAPTER-2

ARARIA DISTRICT : A GEOGRAPHICAL OUT LOOK

2.1 Location

Araria is located in the extreme eastern part of Bihar along the border of Nepal. It lies between 25° 56′ North and 26° 35′ North latitudes and between 87° 03′ East and 87° 42′ East longitude in the extreme eastern part of the *Kosi* plain. The district is surrounded in the north by Nepal; in the east by the Bahadurganj block of Kishanganj district; in the south by Purnea district and in the west by Supaul and a small portion of newly created Madhepura district (Fig-2.1).

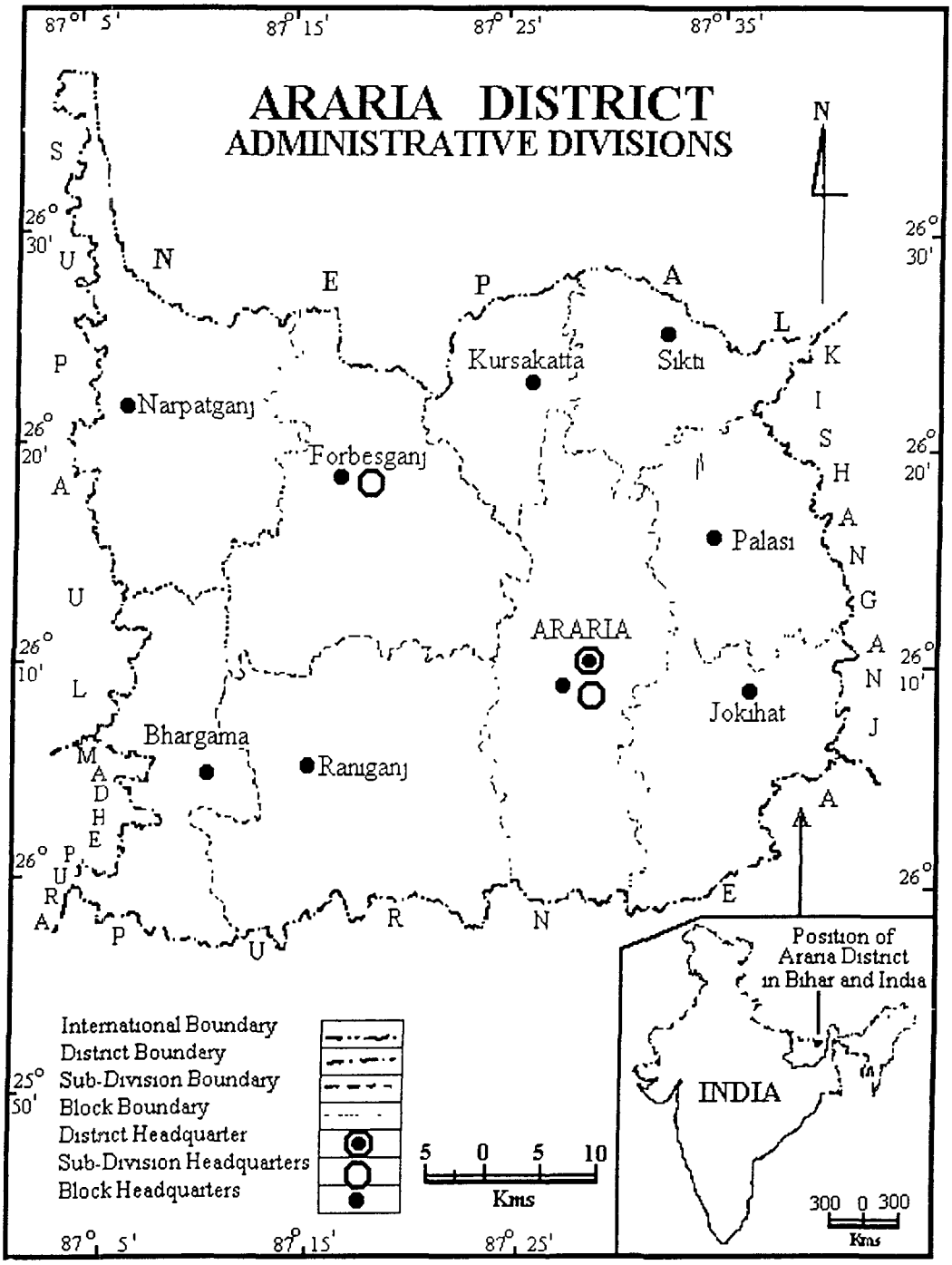
The district has a total area of 2830 square kilometres with a population of 2124831 persons in 2001. The maximum extent of the district from the north to south is about 70 kilometres and from east to west is about 50 kilometres. It has been carved out as an independent district from erstwhile Purnea district as a result of the up-gradation of old Araria sub-division in the year 1989.

From the administrative point of view, the district has been divided into two sub-divisions, namely, Araria, and Forbesganj. These sub-divisions are further sub-divided into nine community development blocks, namely, Araria, Jokihat, Palasi, Sikti, Kursakatta, Forbesganj, Raniganj, Narpatganj and Bhargama which include 751 villages (Table-2.1).

Table-2.1 Administrative Divisions of Araria District (2001)

S.N	Sub-Divisions	S.N	Blocks	No of Villages
1	Araria	1	Araria	85
		2	Jokihat	99
		3	Sikti	57
		4	Palasi	107
		5	Kursakatta	69
		6	Raniganj	89
2	Forbesganj	1	Forbesganj	113
		2	Narpatganj	65
		3	Bhargama	67
				751

Source: *Based on information supplied by District Statistical Office, Araria*



Source District Statistical Magazine-2003

Fig -2.1

2.2 Physical Profile

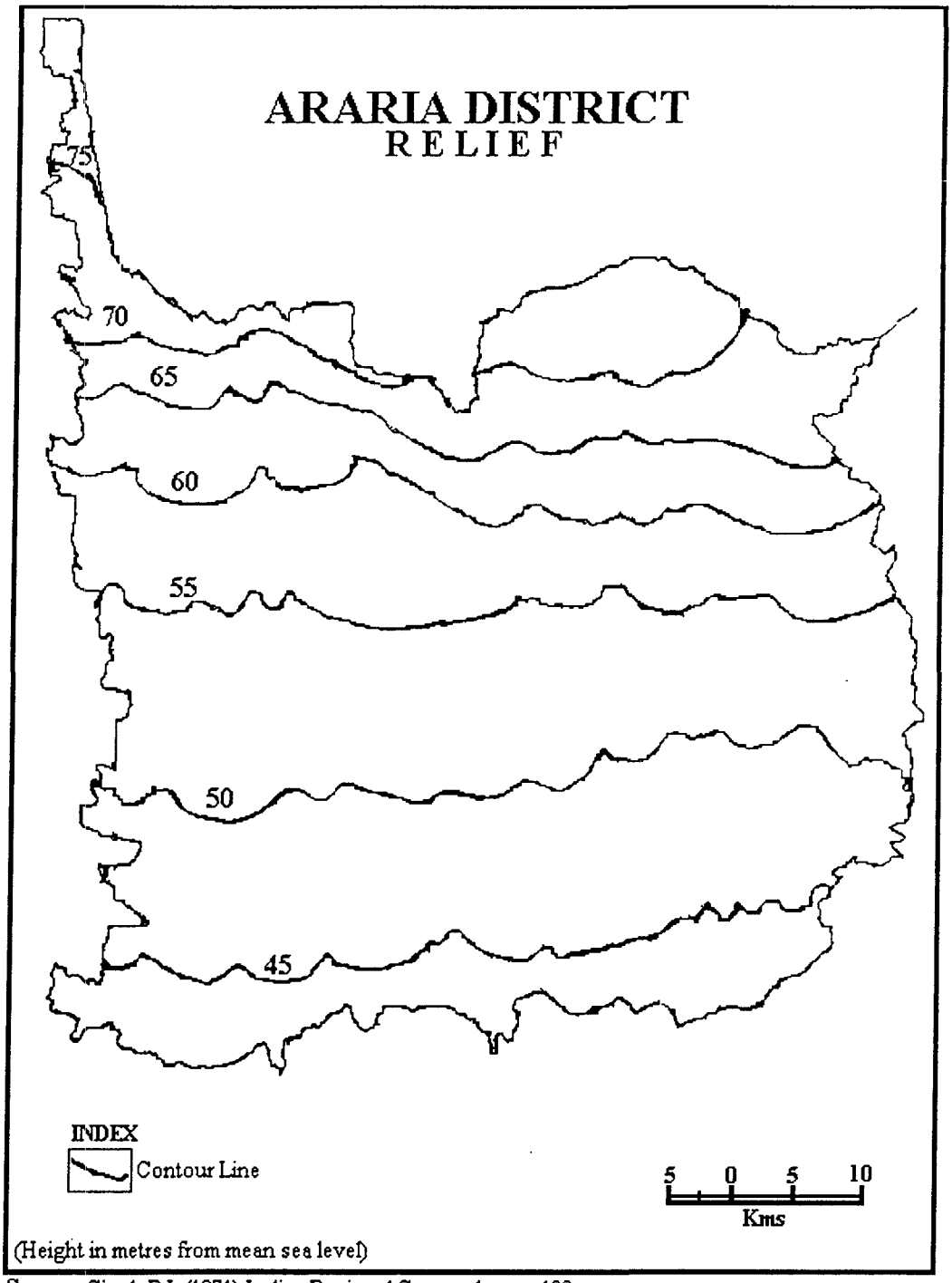
2.2.1 Relief & Structure

The district of Araria is in the extreme eastern part of the middle Ganga plain. The district presents an almost dead level, with the exception of a few tracks of undulating part in the north. Being a play ground of the Kosi, it is rather well defined region with internal homogeneity. Frequent occurrence of flood and shifts of channels have made it largely a *khader* land. Topographically, the whole district is a plain area uninterrupted by any marked topographical break, except, by the imperceptible alluvial uplands and riverside levees, ox-bow lakes, *Tals*, remnants of river channels, or occasionally available badlands and ravines. The migratory nature of the river has further aided the levelling of this plain track by its huge deposits of sands and clays. The plain exhibits a general slope from north-west to south-east having the gradient slightly above one foot for every 2 kilometres horizontal distance. The general height of the plain ranges between 75 metres in the extreme north-west to 50 metres in the south-eastern part of the district from mean sea level[1]. (Fig-2.2)

Basically, the district has two broad types of surface (a) the upland of older alluvium, and (2) the low land. The upland is a track of older alluvium left un-eroded by rivers; however, the lowland includes the eroded surface like *Jhils* (Lakes) and Marshes. Though whole district is level plain track, there are marked alluvial uplands in a number of localities. The most prominent among them is spur of upland track stretching from north to south in the western part of the district. There is also run of alluvial upland in the south eastern part of the district.

---

[1] Singh, R.L (1971) *India: A Regional Geography,* National Geographical Society of India, Varanasi, p 191.



Source : Singh.R.L (1971) India : Regional Geography. pp-190

Fig -2.2

Another belt of high land extends right from the north near Nepal border up to Katihar in the south running along the Katihar-Jogbani railway line of North East Frontier Railways. These are the tracks of the older bed of Kosi river. Besides, these upland tracks, there are number of pronounced depression or *Jhils* and Marshes in the plain. These deeps are most common in south-west part of the district.

2.2.2 Drainage System

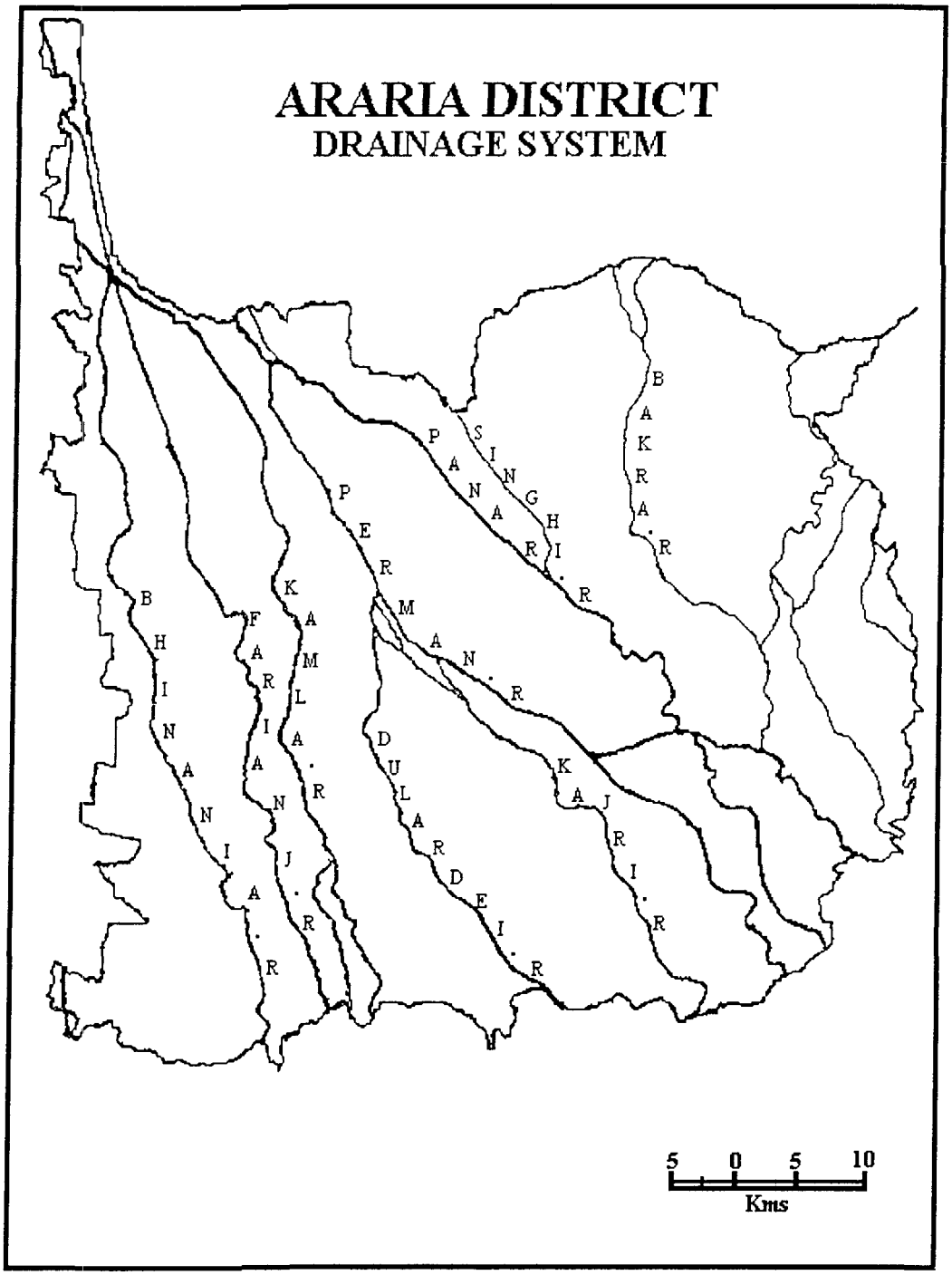
The district enjoys the benefits of many rivers. The rivers follow the general slope from north-west to south-east.

All rivers in the area are tributaries to the *Ganga* river, the largest being the tributaries of *Kosi* and the *Panar* rivers (Fig-2.3). Panar is formed by the confluence of several hill streams form Nepal and roughly marks the boundary line between the arable land in the east and the pasture land in the west of the district. It receives several tributaries on its left bank and eventually joins the *Ganga* river in the south eastern corner of the districts.

However, the river which has left its devastating impact on the district is *Kosi*. It formerly flowed through the district from north to south dividing it into two parts. The course of river shifted westwards. The river now flows further west near Nirmali and Madhepura. It joins the *Ganga* river at some distance east of Kursela.

Kosi river along with numerous affluence tributaries, lakes and marshes is the principal drainage feature of the district. Kosi is an example of antecedent drainage. The river has more distributaries than tributaries in the catchments. It has dendritic pattern.

The most remarkable features of the drainage of this plain is the migratory and aggrading character of the rivers. These rivers cannot remain static in fixed channel for a long time. Due to aggrading character of the river it gets divided into numerous channels.



Source : Singh R L (1971) India Regional Geography pp-195

Fig -2. 3

2.2.3 Climate

The climate of the district may be described as a mean condition of the climate of rest of Bihar and Bengal. The rainfall begins earlier and is decidedly heavier than in other parts of Bihar. Araria is also most eastern district of Bihar which distinctly feels the dry and hot seasons. Moisture laden breezes from West Bengal cause heavy rainfall.

The year can be divided into three seasons on the rotational basis:

(a) The Winter season;

(b) The Summer season; and

(c) The Season of Monsoon rains.

The cold weather commences by the end of October and continues till the beginning of April. It, thus, commences earlier and lasts longer than that of the most parts of Bihar[2]. It is also colder than other southern districts of Bihar. Hoar-frost is being often found in the morning. The maximum and minimum temperatures begin to decline from October onward till January. The prevailing winds blow from west to east and are influenced by pressure distribution and trend of Himalayas.

However, the months of December and January register decrease in both the maximum and minimum temperature. The month of December records 28.1 ° C and 5.7 ° C as mean monthly maximum and minimum temperatures respectively. January is the coldest month in the district which records 26.9 ° C mean monthly maximum and 4.1° C mean monthly minimum temperature respectively. During December and January fog is common phenomenon which occurs during nights and last till the early morning hours. February records an increase in temperature.

---

2 Malley, L.S.S.O (1911) *Bengal District Gazetteers:* Purnea, Bengal Secretariat Book Depot, p-17

The hot season, which is milder than that of other parts of Bihar, lasts till the mid of June. The temperature continuously increases till May. The mean monthly temperature in May is 29.5 ° C. The temperature falls towards east mainly due to rising humidity in that direction under the influence of nor-westers. The wind blows from the east direction for major parts of the day during this season.

The season of rain commences from mid of June with the outburst of south-west monsoon. The advent of monsoon brings a complete change in weather with appreciable falls in temperature. More than 80 per cent of annual rainfall occurs during this season of rains. The months of July, August and September account for more than 75 per cent of the total rainfall. After the commencement of monsoon weather, heavy rainfall begins with an average of 32.5 cm in June and 44.25 cm in July, while in August and September the amount of rainfall is recorded on an average 39.5 cm and 32.25 cm respectively. The heavy rainfall during the monsoon months is due to the change of direction impressed upon the monsoon current by Himalayan range. Rainfall is more irregular in September than in other monsoon months.

2.2.4 Soil

The major part of the Araria district is covered by non-calcareous, non-saline soil of recent alluvium formation, brought down by the streams of Kosi system. Because of remarkable sediments load, the streams deposit every year a layer of new soil. As a result, the soil of plain is azonal i.e. without any marked profile development. The soil lacks in humus and nitrogen contents due to scarcity of plants cover and quick decomposition.

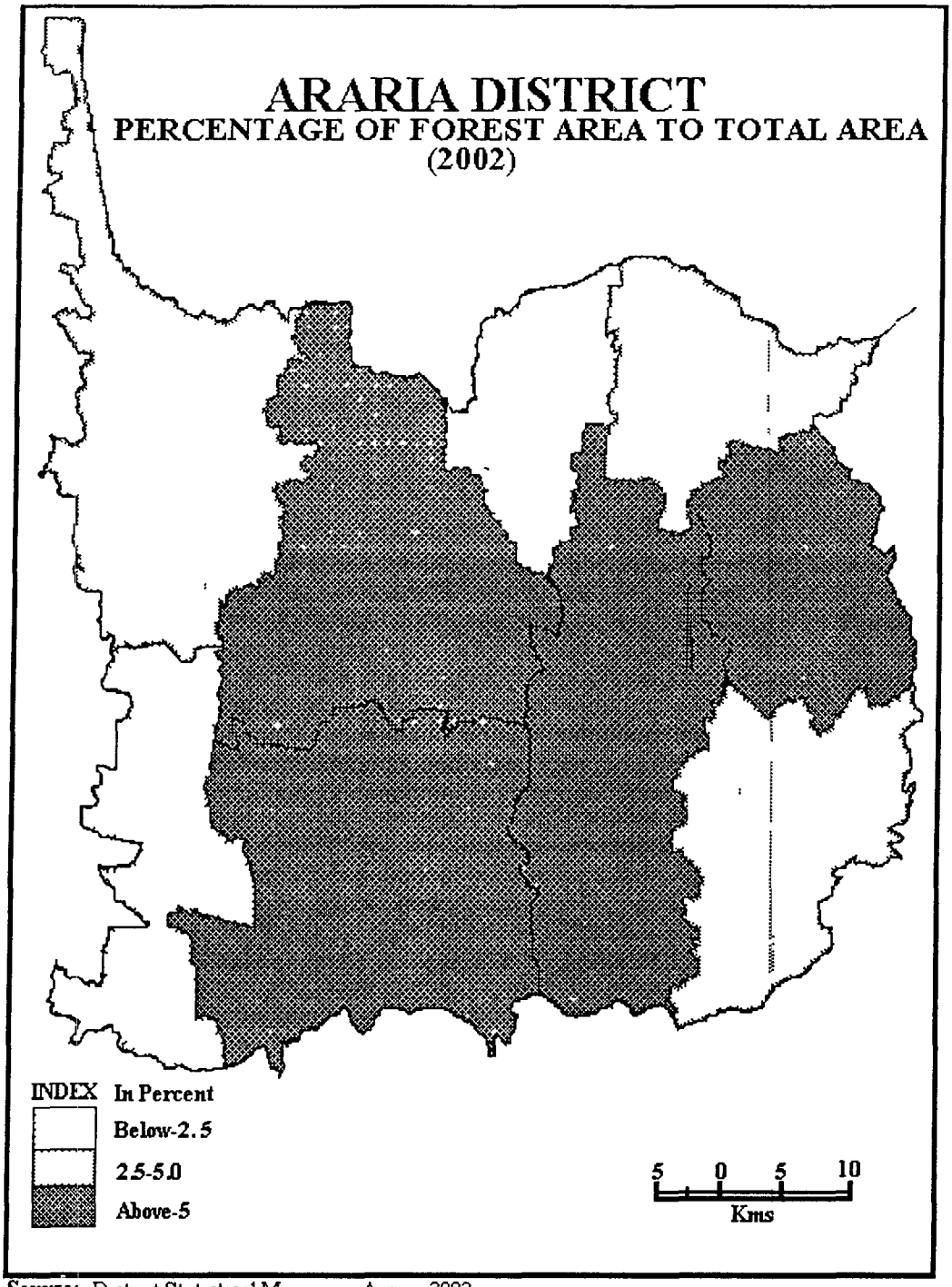
Though the soils of the whole plain are of one major type of alluvial but they differ from one area to another in the texture and colour due to varying amount of sand and clay particles and humus content. On

the basis of clay and sand proportion the soil may be categorized into five general types of clay soil: clay-loam soil, loamy soil, sandy loam soil and sandy soil. The clay soil contains negligible quantity of sand but high percentage of clay and is very fertile because of high retentive capacity of moisture. It is most suitable for rice cultivation. While the clay loam soil is suitable for the cultivation of wheat, gram, maize and oilseeds. The loam soil contains clay and sand in about equal proportion. This is found in southern portion of the district, mainly in south-eastern and south-western parts of the region. The sandy-loam soil spreads over eastern and western part of the district and is suitable for all kind of grains. The sandy soil stretches over larger area in the district and is commonly used for pastures.

2.2.5 Vegetation

The forest cover occupies a very insignificant percentage of total study area. It accounts only 5.17 per cent of total area. The Vegetation of the area is spread over the region in the form of scattered patches in the midst of cultivated land, along the canal, roads etc. Generally, the vegetation consists of jungle, bushes, orchard, and long and old grasses

The block-wise distribution of area under different forests shows an uneven character (Fig-2.4). The highest concentration of forests i.e. about 6.75 per cent of total is found in the block of Forbesganj, while lowest concentration of forests i.e. around 2.02 per cent is found in Bhargama Block. Central and eastern parts of the district are having the highest concentration of forests. Old river beds, ponds and marshes and stream with a sluggish current have a copious vegetation of *Vallisneria* and other aquatic plants. Land subject to inundation has usually a covering of *Tamarix* and reedy grasses, and, in some parts where the ground is marshy, *Rosainvolucrate* is plentiful.



Source: District Statistical Magazine, Araria, 2003

Fig -2.4

Though the district contains less forest, but the sandy west part is treeless. Mango groves are a common feature of the district.

Table-2.2
Area (in hectares) under Forests in Araria District (2001-2002)

S.N	Blocks	Area (in hectares)	(%) of total area
1	Araria	2401	6.48
2	Jokihat	1164	4.24
3	Sikti	638	3.33
4	Palasi	1463	5.90
5	Bhargama	473	2.02
6	Raniganj	2981	6.31
7	Narpatganj	1902	4.98
8	Forbesganj	2747	6.75
9	Kursakatta	406	2.48
Total		**14175**	**5.17**

Source: *District Statistical Magazine 2003*

2.3 Demographic Profile

In 2001 the district of Araria had total population of 2124831 persons and an area of 2830 sq. km. The district of Araria is one of the densely populated districts. The large population and its spatial distribution, density and its occupational structure reveal that here people have not only been creator of cultural landscape but also a basic constituent of the eco-system of the region. The regional distribution of population and its growth is mainly related to the economic landscape of the district. The average density of population for the district is 750 persons per square kilometre. The highest density i.e. 862 persons per per square kilometre is found in Araria block and lowest density i.e. 675 persons per square kilometre is found in Narpatganj. The decadal population growth for the district is 44.77 per cent. Both the density and growth rate of population is generally higher in the sub-division of Araria and Bhargama because of good quality of agricultural land and increasing urbanization which has made the area comparatively prosperous.

2.3.1 Distribution and Density of Population

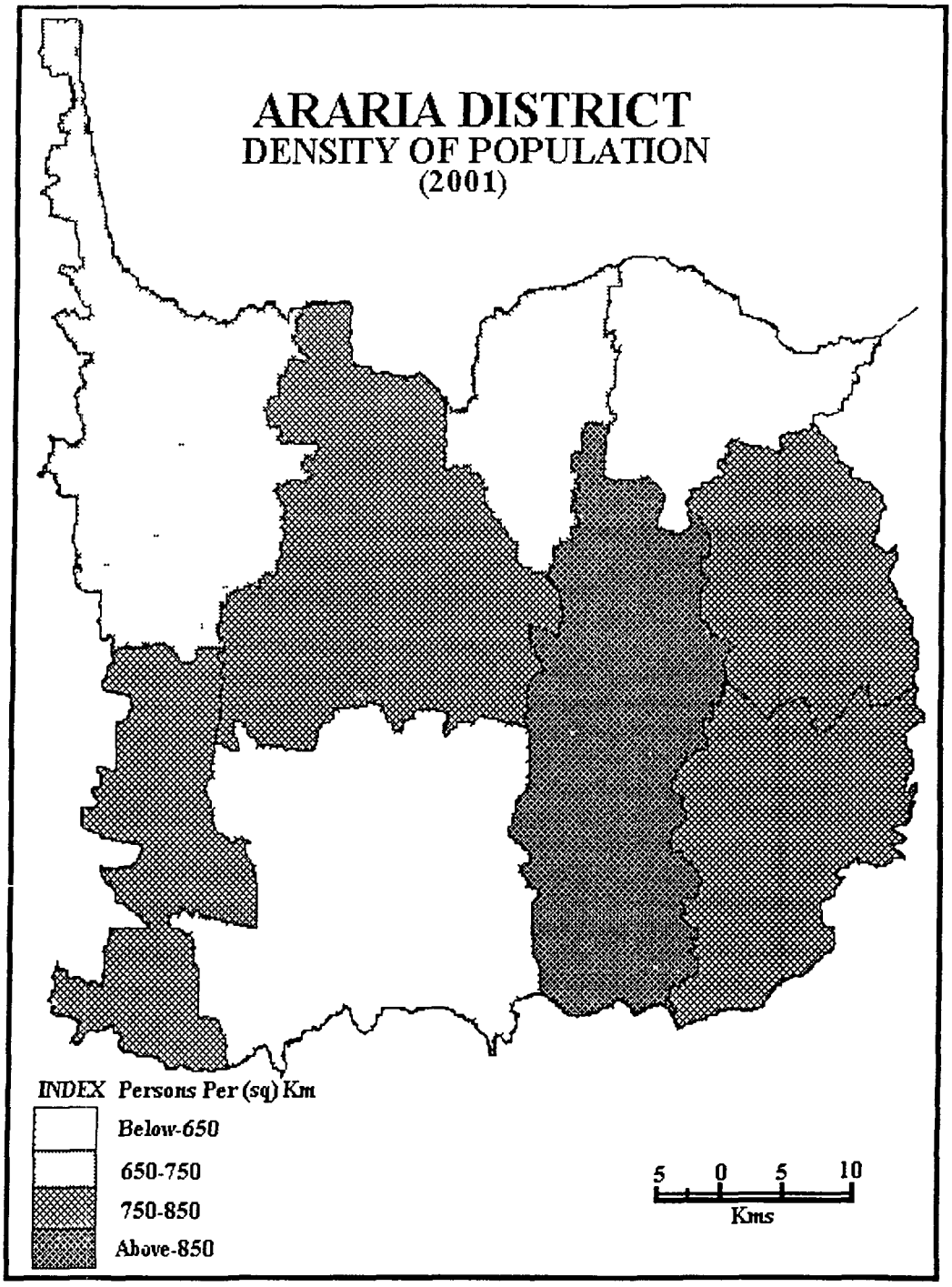
Fig. 2.5 shows the distribution of population density in the district. It clearly indicates that there is considerable variation in the number of persons living in different blocks. The main cause of this uneven distribution can be attributed to the existence of uneven distribution in fertile agricultural land, level of urbanization and the facilities of transport and communication.

Table- 2.3
Block- wise Distribution of Population and its Density in Araria District (2001)

S.N	Blocks	Population (2001) (No of Persons)	Area (km^2)	Density (per/sq km)
1	Araria	355243	411.75	862
2	Jokihat	231708	272.33	850
3	Sikti	123874	191.31	647
4	Palasi	187353	247.86	752
5	Bhargama	180164	233.25	772
6	Raniganj	299582	471.98	634
7	Narpatganj	257846	381.71	675
8	Forbesganj	373640	456.62	818
9	Kursakatta	115416	163.39	706
Total		**2124831**	**2830**	**750**

Source: Census of India Report -2001

The density of population is the measurement of population pressure on a given unit of land. The density of the district as a whole is 750 persons per square kilometre, which is lower than that of whole Bihar. Fig- 2.5 based on census data of 2001 shows block-wise density of population. It is seen that only one block, namely, Araria (862) is having very high group of density which is above 850 persons per square kilometre. The high concentration (density of population) is found in Blocks Jokihat (850), Palasi (752) and Bhargama (772). Northern blocks include Kursakatta (706) and Narpatganj (675) representing medium concentration.



Source Census of India 2001

Fig.-2.5

Raniganj and Sikti represents (634), (667) persons per square kilometre and come under low concentration (density) of population (Table-2.3).

2.3.2 Growth of Population

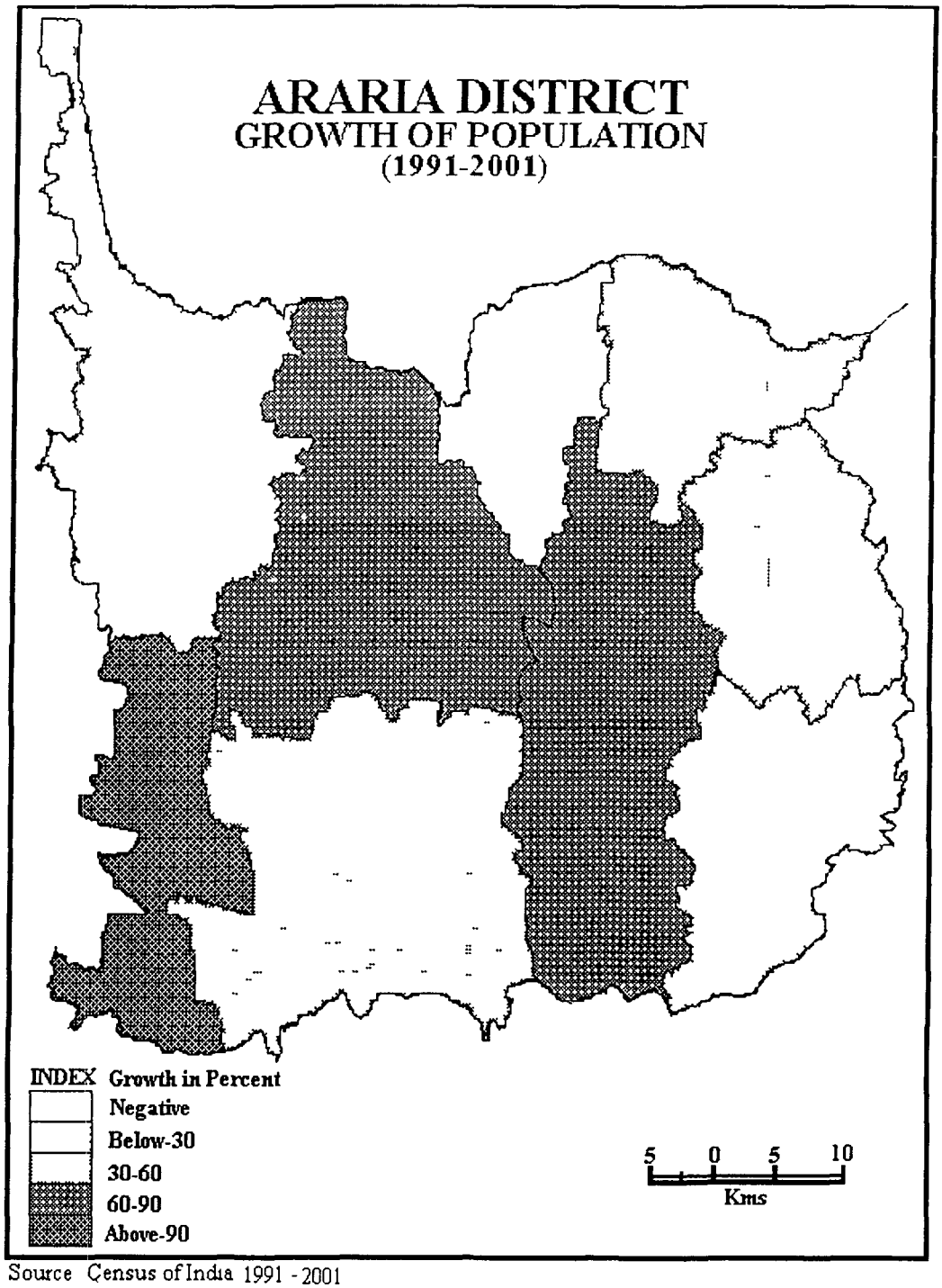
There has been rapid increase in the population of the district since 1951 (Table 2.4). The greatest increase was, however, recorded during the decade 1951-61 when the population increased by more than 45 per cent, while lowest population growth was recorded during 1971-81 being only 19.85 per cent (Table-2.4).

The block-wise population growth rate during 1991-2001 varies between maximum of 104.75 per cent in Bhargama to minimum negative growth of 14.58 per cent in Kursakatta block. Bhargama, Araria, and Forbesganj blocks recorded the highest growth rate which is more than that of other parts of the district. The percentage of growth of population recorded in different blocks varies with Bhargama reporting 104.75 per cent, Forbesganj 83.83 per cent, Araria 65.45 per cent, Palasi 33.95 per cent, Sikti 33.28 per cent, Raniganj 30.65 per cent, Jokihat 28.64 per cent, Narpatganj 14.05 per cent , and Kursakatta recording a negative growth of 14.58 per cent during the same period (Table-2.5).

Table- 2.4
Growth of Population in Araria District (1951-2001)

Year	Total Population (No of persons)	Decadal Variation (No of persons)	Growth (in %)
1951	537600	-	-
1961	779578	+241978	+45.01
1971	994585	+215007	+27.58
1981	1191967	+197382	+19.85
1991	1509360	+317393	+26.63
2001	2124831	+615471	+40.77

***Source**: Census of India Report –1951, 61, 71, 81, 91 and 2001*



Source Census of India 1991 - 2001

Fig -2.6

Table- 2.5
Block-wise Growth of Population in Araria District (1991-2001)

S N	Blocks	(No of persons)			Growth (in %)
		Population 2001	Population 1991	Variation	
1	Araria	355243	214694	+140549	+65.46
2	Jokihat	231708	180120	+51588	+28.64
3	Sikti	123874	92943	+30931	+33.28
4	Palasi	187353	139866	+47487	+33.95
5	Bhargama	180164	87989	+92175	+104.75
6	Raniganj	299582	229294	+70288	+30.65
7	Narpatganj	257846	226084	+31762	+14.05
8	Forbesganj	373640	203249	+170391	+83.83
9	Kursakatta	115416	135116	-19700	-14.58
Total		**2124831**	**1509360**	**+615471**	**+40.77**

***Source**: Census of India Report –1991 and 2001*

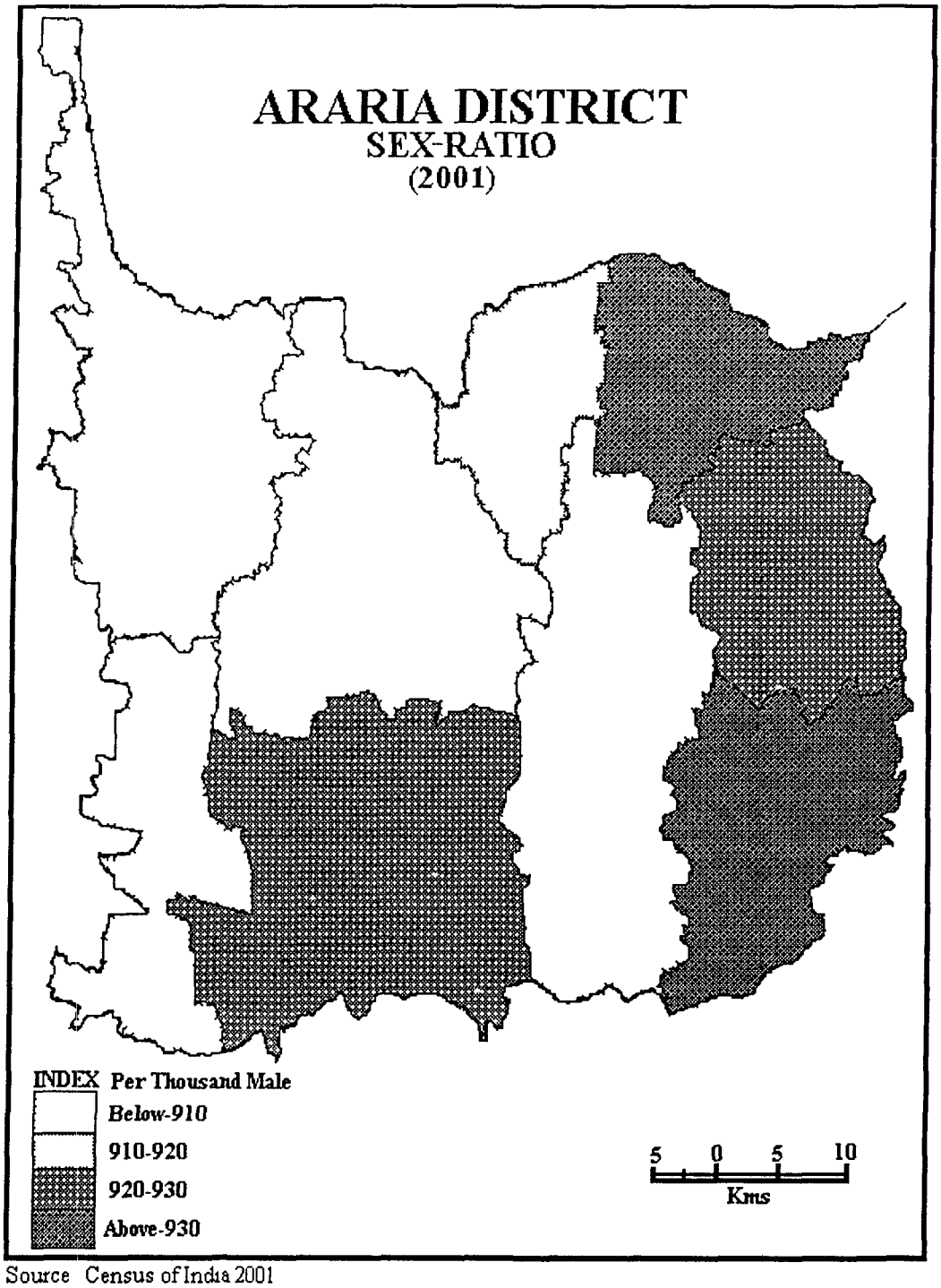
2.3.3 Sex-Ratio

The sex-ratio of Araria district shows a dominance of male population. In 2001, the district reported 921 females per 1000 males. The sex-ratio is higher in rural areas (927) as compared with the urban areas (869). Many socio–economic factors contribute to this disparity of sex-ratio. Block level distribution of sex-ratio shows that the highest ratio has been found in Sikti and Jokihat i.e. 933, while minimum of 904 females per 1000 males was registered in Forbesganj block (Table-2.6).

Table 2.6
Block-wise Distribution of Sex-Ratio in Araria District (2001)

S.N	Blocks	Rural	Urban	Average
1	Araria	908	857	908
2	Jokihat	933	-	933
3	Sikti	933	-	933
4	Palasi	922	-	922
5	Bhargama	908	-	908
6	Raniganj	924	-	924
7	Narpatganj	908	-	908
8	Forbesganj	910	877	904
9	Kursakatta	914	-	914
	Total	**927**	**869**	**921**

***Source**: Census of India Report -2001*



Source Census of India 2001

Fig.-2.7

2.3.4 Literacy

Literacy rate of any area has great significance since it serves as an indicator of the capacity of people to learn and adopt a new techniques and methods of production both in agriculture and industry, and to live a more healthy, prosperous and active life. The district had registered continuous increase in the literacy rate since 1951. It is reported that in Araria district female literacy rate increased from 4.89 per cent in 1951 to 27.11 per cent in 1991. In 2001, the district registered 34.94 per cent literacy rate (Table-2.7), with female literacy of 22.14 per cent and male literacy of 46.50 per cent. Block-wise literacy level shows that Forbesganj is having the highest literacy rate of 38.31 per cent, while the lowest literacy rate has been recorded as 30.30 per cent in Palasi block.

Table- 2.7
Block-wise Distribution of Literacy in Araria District (2001)

S.N	Blocks	Male	Female	Total
1	Araria	45.70	25.51	36.15
2	Jokihat	41.41	20.24	31.24
3	Sikti	46.92	19.32	33.70
4	Palasi	43.12	16.21	30.30
5	Bhargama	47.69	22.54	35.83
6	Raniganj	46.88	22.17	34.62
7	Narpatganj	47.27	19.63	34.23
8	Forbesganj	49.07	26.20	38.31
9	Kursakatta	52.93	20.03	37.40
	Total	**46.50**	**22.14**	**34.94**

***Source**: Census of India Report -2001* *(In Percent)*

2.3.5 Urban Population

The urban population in the district is only 6.23 per cent of total population. The level of urbanization is below the state average. Out of nine development blocks only two blocks have urban population which spread on the three towns. The highest concentration is found in Forbesganj block which has two towns with 19.25 per cent urban

population. The largest town is Forbesganj with a population of 41982 persons. It is a sub-division and a block headquarters and is connected with good road and railway transport network. The second town of the Forbesganj block is Jogbani with a population of 29962 persons, located in the extreme northern part of the block near the Indo-Nepal border.

The third concentration of urban population is found in Araria block, which constitutes 17.06 per cent of total population. Araria is the largest town of the district with a population of 60594 (Table-2.8).

Table-2.8
Block-wise Rural-Urban Population in the Araria District (2001)

S.N	Blocks	Rural Population (No of persons)	Urban Population (No of persons)	%Urban Population
1	Araria	294649	60594	17.06
2	Jokihat	231708	-	-
3	Sikti	123874	-	-
4	Palasi	187353	-	-
5	Bhargama	180164	-	-
6	Raniganj	299582	-	-
7	Narpatganj	257846	-	-
8	Forbesganj	301696	71944	19.25
9	Kursakatta	115416	-	-
Total		**2124831**	**132538**	**6.23**

Source: Census of India Report –2001

2.4 Agricultural Economy

2.4.1 Land use

Land use of an area is determined by the nature and general layout of physical elements.

Classification of land use (Table-2.9) shows that the net sown area occupies about 65.76 per cent of the total area of the district, and thus constitutes the most dominant category of the land use. It is followed by the category of land put to non-agricultural uses, which accounts for 12.51 per cent of the total

area. The current and other fallow lands account for 0.81 per cent and 2.23 per cent of the area. Culturable-waste land accounts for 1.84 per cent of the reported area. Forests, trees, groves etc. accounts for only 5.01 per cent of the total reported area.

Table 2.9
Land-use in Araria District (2001-2002)

S. N	Land-use Type	Area (Thousand Hectares)	Area (in percentage)
1	Land put to non-agricultural uses	35.4	12.51
2	Barren and Uncultivated land	32.33	11.42
3	Culturable-waste land	5.2	1.84
4	Other Fallow	6.3	2.23
5	Permanent pastures and grazing land	1.2	0.42
6	Forest/Groves, Trees	14.17	5.01
7	Current Fallow	2.3	0.81
8	Net-Sown Area	186.1	65.76
Total		**283**	**100**

Source: *District Statistical Magazine 2003 P. 30.*

2.4.2 Cropping Intensity

Araria district's economy is primarily based on agricultural production. There are three agricultural seasons in the district viz., *Rabi, Kharif* and *Zaid. Rabi season* starts in October or November and harvesting is done in March and April. The important *rabi* crops are wheat, barley, gram, peas, mustard, linseed, potato etc.

Kharif season starts in July and the harvesting is done in October or November. The millets, maize, arhar, rice and sugarcane etc. are the main crops of *Kharif* season. *Zaid crops*,

which are of relatively little importance, occupy the fields from April to July. These crops are synchronized with the winter, rainy and summer seasons respectively.

Cropping intensity is measured in terms of the number of times a land is put to agricultural use within a year, serves as a good index for assessing the agricultural prospects of an area. The average cropping intensity of nine development blocks of Araria district was 142.93 per cent in 2000-2001. It is not uniformly distributed within the district. As may be noted from (Table 2.10). Araria, Jokihat, Palasi and Forbesganj blocks which have higher value of cropping intensity than the average cropping intensity of the district, which is 142.93 per cent. The lowest cropping intensity of 120.18 per cent was recorded for Narpatganj block.

Table 2.10
Cropping Intensity in Araria District (2001-2002)

Blocks	Net sown area (hectare)	Total cropped area (hectare)	Cropping intensity (percentage)
Araria	28563	44631	156.25
Jokihat	17865	28336	158.61
Sikti	12573	17481	139.03
Palasi	16322	24328	149.05
Bhargama	15252	19812	129.89
Raniganj	31215	42600	136.47
Narpatganj	22000	26441	120.18
Forbesganj	31550	48037	152.25
Kursakatta	10760	14334	133.21
Total	**186100**	**266000**	**142.93**

Source: *District Statistical Magazine 2003, p. 31.*

2.4.3 Cropping Pattern

The fertile and vast agricultural land of the study area is usually covered with various crops, which are cultivated as per climatic conditions and availability of abundant water resources. The main crops

are Paddy, Wheat, Jute, Maize, Pulses, and Potato etc. About 44.75 per cent area is under Paddy, 21.58 per cent under Wheat, 6.64 per cent area under Maize, 3.69 per cent area comes under the Pulses, 1.78 per cent area under Potato, 0.28 per cent devoted to Onion, 14.99 per cent area under Jute and Vegetables and others occupy 5.75 per cent of the area. (Table -2.10)

Block-wise distribution of area under different crops does not vary very much. However, whatever the variation, it is because of the nature of demand and local agro- climatic conditions. Paddy occupies the first position in area-wise distribution in different blocks of the district. Maximum area under Paddy has been found 48.13 per cent in Sikti and Narpatganj followed by Araria with 45.90 per cent Jokihat with 44.60 per cent, Palasi with 44.02 per cent, Forbesganj with 43.97 per cent, Raniganj with 43.44 per cent, and Bhargama with 43.08 per cent. The lowest area under Paddy has been found in Kursakatta with 41.15 per cent. Wheat Occupies second position in terms of cultivated area. Maximum area under Wheat has been found as 24.47 per cent in Jokihat while minimum area i.e. 20.94 per cent in various development blocks of the district. Third position of crop area-wise is Jute, occupying 14.99 per cent of the district as a whole but block-wise maximum proportion has been recorded as 18.81 per cent in Bhargama while minimum 13.71 per cent in Kursakatta. Maize occupies fourth position area-wise occupying 6.64 per cent. Maximum area of maize i.e. 12.78 per cent has been recorded in Kursakatta. Moreover, Pulses, Potato and Onion contribute below 5 per cent to the total area under different crops in different blocks of the district.

2.4.4 Animal Husbandry

With a predominantly agricultural economy, livestock rearing is very important agricultural activity of the district. Cattle are important species of livestock but they are generally not of superior breed. The cattle are not well fed and therefore, the average milk yield of cow and buffalo is quite low. Apart from cattle i.e. cows, bullocks and buffalo, other animals like sheep, goats, poultry, pigs and birds are also reared in the district. In order to improve the local breed, poultry development center has devised various schemes. There are a number of veterinary hospitals and dispensaries spread over the entire district. Treatment, prevention and suppression of diseases of livestock are the main functions of veterinary institutions.

2.5 Non-Agricultural Economy

There is no mining and heavy industries in existence in the district. The area has potential for location of a number of industries. It is jute and paddy growing area and therefore, there is enough scope for industries based on these two raw materials. There are number of rice and oil mills situated both in rural as well as urban parts of the district. Recently, there is proposal of Jute industry by Sahara India Pvt Ltd, just nearly 2 kilometres away from the Araria town.

Araria is mainly an agricultural district. The trade and commerce of the district is also affected by its geo-physical condition. It has close commercial relations with the border areas of Nepal since time immemorial. The chief commercial commodity of the district is jute and the wholesale *mandi* of jute, in these areas, is at Forbesganj. Biratnagar on Jogbani side and Bhadarpur on Galgalia side are the two main trade centers of Nepal with which the district has regular and close commercial relation.

Table-2.11 Area Under Different Crops in Araria District (2001-2002)

S. N	Blocks	Rice	Wheat	Maize	Pulses	Potato	Onion	Jute	Vegetables Others	Total
1	Araria	20486 (45.90)	9843 (22.05)	2592 (5.81)	1946 (4.36)	557 (1.25)	283 (0.63)	7441 (16.67)	1483 (3.32)	44631 (100)
2	Jokihat	12638 (44.60)	6934 (24.47)	1645 (5.81)	918 (3.24)	353 (1.25)	180 (0.64)	3900 (13.76)	1768 (6.24)	28336 (100)
3	Sikti	8413 (48.13)	3660 (20.94)	1015 (5.81)	570 (3.26)	218 (1.25)	111 (0.63)	2407 (13.77)	1087 (6.22)	17481 (100)
4	Palasi	10709 (44.02)	5294 (21.76)	1613 (6.63)	988 (4.06)	704 (2.89)	154 (0.63)	3348 (13.76)	1518 (6.24)	24328 (100)
5	Bhargama	8535 (43.08)	4149 (20.94)	1150 (5.80)	642 (3.24)	248 (1.25)	125 (0.63)	3727 (18.81)	1236 (6.24)	19812 (100)
6	Raniganj	18504 (43.44)	8929 (20.96)	2478 (5.82)	1380 (3.24)	1033 (2.42)	770 (1.81)	6847 (16.07)	2659 (6.24)	42600 (100)
7	Narpatganj	12726 (48.13)	5537 (20.94)	1535 (5.81)	856 (3.24)	331 (1.25)	167 (0.63)	3639 (13.76)	1650 (6.24)	26441 (100)
8	Forbesganj	21120 (43.97)	10059 (20.94)	3790 (7.89)	2056 (4.28)	1107 (2.30)	305 (0.63)	6602 (13.74)	2998 (6.24)	48037 (100)
9	Kursakatta	5899 (41.15)	3001 (20.94)	1832 (12.78)	464 (3.24)	179 (1.25)	95 (0.66)	1965 (13.71)	899 (6.27)	14334 (100)
	Total	**119030 (44.75)**	**57406 (21.58)**	**17650 (6.64)**	**9820 (3.69)**	**4730 (1.78)**	**2190 (0.82)**	**39876 (14.99)**	**15298 (5.75)**	**266000 (100)**

Source: *District Statistical Magazine 2003*

(Area in Hectares)

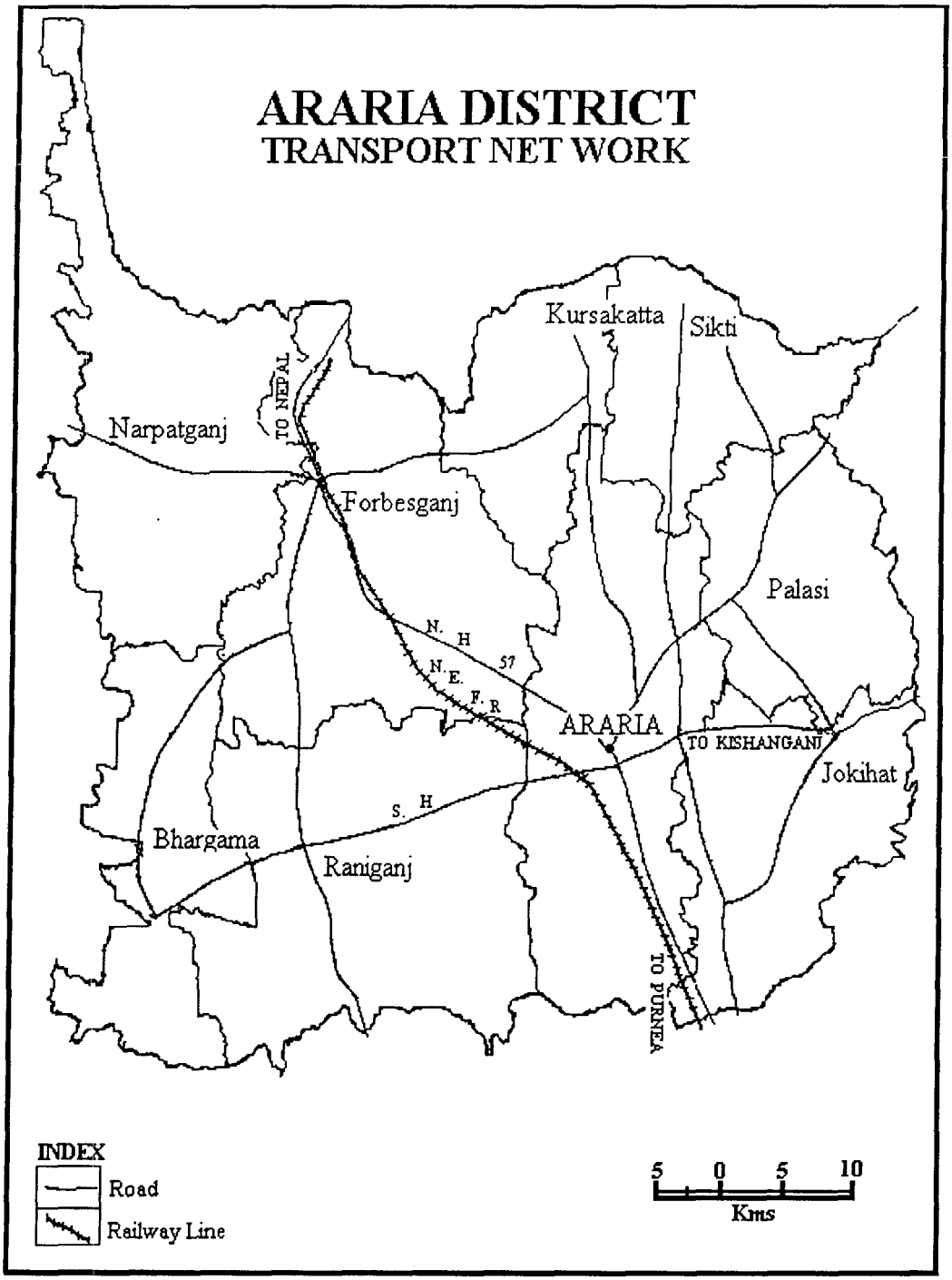
2.5.1 Transportation

Transport network is a dominant factor in the development of socio-economic and cultural life of the region. It plays an important role in creating contact between city and market and its tributary area and helps in the movement of goods and people efficiently.

The basic structure of transport system of the region consists of network of road, railways and navigable river by the boat of various sizes. These transport arteries particularly the road and railways, have profound impact on the nature of regional economy and social and political structure and have brought out remarkable change in the type and volume of traffic as well as in its orientation in recent years. Intra-district transport suffers from the enormity of rather low connectivity of villages to main roads because of frequent floods by the tributaries of Kosi. It discourages the agricultural and industrial development in the district.

The intra-district analysis of road network reveals that the district roads are classified as (a) National highway (b) State highway (c) Major district highway and (d) The village road.

National highway number 57 passes through the centre of the district, while the state and district roads connect the block headquarters. The total length of metalled roads in the district is 474 kms. The distribution of road length is not uniform in every block and varies from block to block. It is evident from the Table 2.12, that the Araria block has maximum length of 86 kms of metalled road, followed by Forbesganj, Jokihat, Raniganj, Palasi, Kursakatta, Bhargama, Sikti and Narpatganj having 82 kms, 61 kms, 52 kms, 51 kms, 48 kms, 34 kms, 33 kms and 27 kms respectively. So far the length of metalled road per lakh population is concerned Kursakatta has the maximum length 41.58 kms.



Source : District Statistical Magazine-2003

Fig.2.8

It is followed by Palasi, Sikti, Jokihat, Araria, Forbesganj, Bhargama, Raniganj and Narpatganj having 27.22 kms, 26.63 kms, 26.33 kms, 24.21 kms, 21.94 kms, 18.87 kms, 17.36 kms and 10.47 kms respectively.

Out of the total number of 751, villages, the number of villages having the facilities of bus stop is 205.

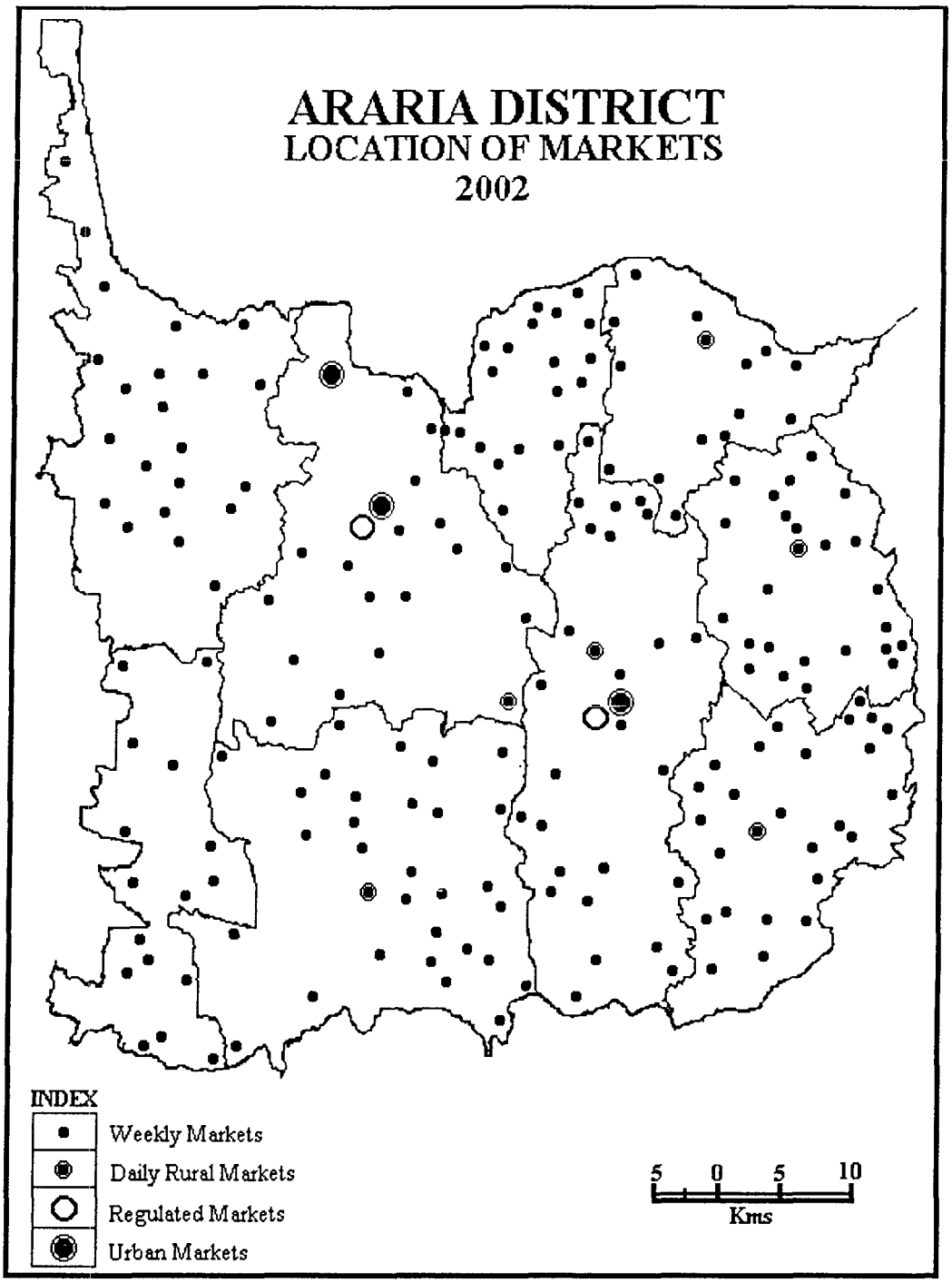
Table 2.12
Block -wise Distribution of Transport Facilities in Araria District (2001-2002)

S. N	Blocks	Length of Metalled Road (in kms)	Length of Metalled road (km/100000 persons)	Total No		
				Bus stop	Bus Stand	Railway Station
1	Araria	86	24.21	29	3	4
2	Jokihat	61	26.33	28	2	-
3	Sikti	33	26.63	15	1	-
4	Palasi	51	27.22	26	1	-
5	Bhargama	34	18.87	12	1	-
6	Raniganj	52	17.36	28	1	-
7	Narpatganj	27	10.47	19	1	-
8	Forbesganj	82	21.94	31	3	5
9	Kursakatta	48	41.58	17	1	-
Total		**474**	**22.30**	**205**	**14**	**9**

Source: District Statistical Magazine 2003

2.5.2 Distribution of Market Centres

There are 201 market centres, of which three are towns, namely, Araria, Forbesganj and Jogbani. The district has 198 periodic/rural market centres, which are unevenly distributed (Fig-2.9). At block level, their number varies between maximum 31 market centres in Raniganj to minimum of 15 markets centres in Sikti. Remaining blocks account for Araria 27, in Jokihat 26, in Palasi 25, in Bhargama 16, in Narpatganj 22, in Forbesganj 18 and in Kursakatta 18 market centres. At the block level along with uneven distribution of total number of markets, their frequency also varies.



Source : District Statistical Magazine-2003

Fig.-2.9

Raniganj accounts for maximum 62 markets while Sikti holds minimum 33 markets. Among different types i.e. daily, weekly, bi-weekly and tri-weekly of markets, bi-weekly markets account for significant number with 151 (76.26 per cent) market centers while the weekly and tri-weekly shares 27 markets (13.64 per cent), and 14 markets (7.07 per cent).

CHAPTER-3

AGRICULTURAL MARKETING: AN OVERVIEW

3.1 Agricultural Marketing: An Introduction

Agricultural marketing includes the farmer's transaction both buying and selling, but it is generally confined to the selling side of his business and is used to cover all activities involved from the time when products leave the farm, till it reaches the consumer. Khols[1] has defined marketing as "the performance of all business activities involved in the flow of goods and services from the point of initial agricultural production until they are in the hands of ultimate consumer". Cherington[2] has defined it as a process "designed to cover the complex group of services involved in the distribution of merchandise from producer to consumer, excluding only those functions which alterations in the farm commodity"(sic). According to National Commission on Agriculture (XII Report), "agriculture marketing is the process which starts with a decision to produce agricultural commodity and it involves all the aspects of market system viz. functional and institutional based on economic and technical considerations and includes pre and post harvest operations i.e. assembling, grading, storage, transportation and distribution". It is apparent from the above definitions that the system of agricultural marketing is very complex.

There are three entities involved in the marketing system. They are,

(1) the Producer, (2) the Consumer, and (3) the Middlemen. Each of them has its own objectives which often conflict with other's interests.

---

1 .Khols, R.L. (1967), *Marketing of Agricultural Products*, The Mac Millan Company, p.1.

2 Cherington, *Elements of Marketing*, p.122.

(1) The producer most often aims at getting largest possible returns for his produce.

(2) The consumer tries to get the required quantities of goods of better qualities at the least possible costs.

(3) The middleman wants to realize the maximum possible net profits from the deal.

Thus, the aim of an efficient marketing system is to balance the conflicting interests of all these entities.

The continuous balance of conflict among the market participants makes the marketing system dynamic. That is why it is said that change is the general rule of marketing; the status quo is never permanent. In real sense marketing involves many services besides selling and distribution. It is the functions of the marketing system to give the goods farm utility, time utility and place utility which the farmer produces. With respect to farm, the heterogeneous output produced on the farms must be stored in grades and if possible should be classified according to grades, so that different grades may get optimum price. These services are to be performed by neutral parties, government agencies or by private dealers. With reference to place, the question arises, how to provide accurate price differentials based upon location of product and consumption place of the products. For this, it is essential to organize cheap and adequate transport system. The time aspect is of great importance because of the seasonal nature of agricultural products and as they are marketed over an extended period. Grading and good storage facilities should be linked with reasonably good forecasts of future demand and supply. It will help in forecasts of prices. Middlemen perform these services. Most of the farmers are not in touch with distant customers. Neither they are aware of the organizations and conditions of

marketing, nor can follow market information intelligently. Hence some sort of intermediary or agency is necessary between producer and consumer.

Agricultural marketing, today, exists in various stages in different parts of the world. In developed countries production system has developed greatly, because machine and other lifting system have developed to facilitate the collection and packaging of grains and other products. While in less developed countries like India, the means of production is quasi-mechanical and mode of production is for domestic sustenance. Here, direct marketing between producers and consumers can be found. This is true for a large number of farmers who are, more or less, self sufficient groups of people, still producing for the sake of sustenance. These farmers do not gain benefit from the wholesale and specialized markets as their deals have very small supplies to offer as compared to large transactions carried on, in the developed countries. The farmers sell whenever the crops are ready for market or when he is in need of money.

Thus, in developing countries lack of proper marketing services, un-graded and non-standardized commodities, poor and unscientific packaging and method of transport, absence of public markets and warehouses, unbalanced production, lack of market information, unfair practices of middlemen and bad credit facilities are the most important causes of inefficient marketing. The problem of in-adequate transport network storage and grading facilities appear to be great hurdles to reach the product from surplus area and season of production to ultimate consumers at right place and time within adequate quantity and quality at reasonable price. These problems are generally overcome by the middlemen. At the end, therefore, the

consumer pays for both the goods and services, a high prices of so-called convenience.

Although under a system of individual enterprise and freedom of individual choice as it operates in agriculture, the marketing services should have been performed at a cheap price, yet it seems that competition, in fact, is far from perfect. Marketing services bring in imperfection in the market. Marketing agencies, do not affect consumer's demand for food and supply rather it is determined by the activities of the farmers and the agro-climatic conditions. Therefore, middlemen do not determine retail prices for most kind of foods and other agro products. But the margin taken by middlemen determines the net income of the farmers which subsequently affects farm production and marketing. According to Cohen (1958)[1] the danger of wholesaling is mainly excessive profits while in retailing it is excessive costs. Consumer preferences are not communicated to the producers in time and the marketing system do not co-ordinate itself with the fluctuations in supply[2].

The term agricultural marketing has varied connotations as understood by different scholars. Marketing is concerned with the channels of distribution through which goods move from producers to consumers, the entire process is performed at places known as market centers which, like organisms, are rather active with functions, behavioural pattern and growth process, contributing to a geometric pattern[3]. Agricultural marketing has a large range of activities which cause a commodity to shift hands from the farm to

---

1 Cohen, R (1958), *The Economics of Agriculture*, Cambridge, p. 88

2 Kulkarni, K R (1956), *Agricultural Marketing in India*, Vol 1, Bombay pp 2-12

3 Saxena, P (2003), *Marketing and Sustainable Development*, Rawat Publication New Delhi

the kitchen. It is characterized as spatio-temporal integration of numerous activities from production to consumption in a single institutional network.

At lowest level of the agricultural marketing lies at the primary market or village *haat*, where farmers sell their commodities to village merchants and other traders. Each village or cluster of villages has markets which often assemble once or twice a week. The days, on which these markets meet, are fixed, so that itinerant traders can visit the maximum possible number of markets held in a given area. Most of the transactions in these markets involve small quantities. Producers sell their surpluses and purchase supplies of daily requirements. Part of the produce is also purchased by small retailers who sell it to the non- farm rural population. The rest of the produce is purchased by intermediaries who sell it to wholesale markets.

Village markets or *haats* are very poorly equipped with infrastructural facilities. Most of them are uncovered, far off from metalled roads, devoid of storage, drinking water, drainage, and other facilities. The roads linking most of these markets are so poor that only bullock carts can travel on them. Some markets lack roads completely. Hardly any of these markets have telephone or telegraphic, even postal facilities. Producers from within a radius of two to ten kilometres gather in these markets to sell their small surpluses. Farmers who have relatively large surpluses go to large wholesale markets. But farmers with small surpluses do not find the price difference substantial and hence going to wholesale markets is not worthwhile[1].

---

[1] Prasad, J. (1989), *Marketable Surplus and Market Performance*, Mittal Publication, Delhi, p.31.

Primary wholesale markets are held at fixed locations. The function of transaction of large volume of agro-commodities emanating from village markets takes place in here. Some wholesale markets also serve as the assembling point for distant producing centers. Most of the wholesale markets are situated in the district or *taluka* headquarters' or at important business centers. Some of these wholesale markets are also called secondary markets as the traders operating in these markets transact a large volume of business coming from other wholesale markets. From the primary or village markets, the village merchants, itinerant dealers, and various other agencies bring their commodities to the secondary markets to sell them either to commission agents or to the wholesale traders directly at prevalent prices.

In most of the secondary markets which are also called terminal markets the commodities are brought by intermediaries. Farmers, particularly the big farmers, also bring their produce directly to the commission agents or wholesalers.

Thus, the agricultural marketing is being characterized as the "task of assembling the produce from widely scattered produces moving them to ultimate consumers is performed by a chain of intermediaries through which the various agricultural commodities pass, and in the process, gain in value due to change in time, place and ownership"[1].

3.2 Situation of Agricultural Marketing in Bihar: An Assessment

Since the agricultural production in Bihar is still largely for the immediate consumption purpose, not much marketed surplus is generated. And whatever the surplus which is marketed comes

---

[1] Subbarao,K. (1989), *Agricultural Marketing and Credit*, Monograph.2, Research in Economics, Secondary Survey, Indian Council of Social Research, New Delhi. p.1.

largely from two sections, the first from those of the farmers operating the small sized land holdings who have to make distress sale and the second, from of those owning large size of land holdings (above 15-20 acres)[1].

Those farmers with medium size land holding, who were largely engaged in production for domestic consumption during sixties, are still not producing for market even after use of high yielding varieties seeds and assured irrigation. In Bihar, farmers holding above 15 acres of land may be expected to contribute for the marketable surplus[2]. But the percentage of such farmers is very small and the quantity contributed by them to the market is only a fraction of the volume coming for sale. Hence, this surplus has got to be added to the quantities of what we may say distress sale in the lower economic classes. The economic compulsions force them to sell their marketable surplus in the market. A part of their products is secured for discharging their rent and other liabilities and for purchasing cloths, kerosene, salt and other necessities of life.

Part of the real surplus of the farmers holding above 15 acres of land goes in the hand of families' permanent storage. These activities are mostly performed by more prosperous families which maintain their stock regularly. Though it is renewed partially by leasing out in the lean months and the recoupment after harvest when loan is paid back. Another part of the surplus circulates in the locality itself as being paid off in the form of wages and sold in the local markets. Thus, only small fractions of the surplus from class I (above 15 acres) along with insignificant surplus of class II (with holding 5-

---

1 P, Jagdish (1979), *Agricultural Marketing in Bihar Socio-Economic Constraints*, Yojna, No-13, p 24

2 Sinha, G N (1956), *An Introduction to Food Economics*, Allahabad, pp 79-80,

15 acres), really comes in the market and circulates over wider areas in the markets.

Another factor which influences the amount of retention of various commodities the by farmers is the comparative value of local production of commodities. The effect of this factor is particularly evident in Bihar where paddy is staple food and is of lowest market value. Hence it is not surprising to find the proportion of wheat marketed being relatively high and the proportion retained being relatively low[1]. At the same time it is observed that the proportion of pulses and cash crops which are marketed are rather high as compared to marketed proportion of staple food grains and other course grains.

Further the mode of disposal of the marketable surplus or distress sale depends on market access returns from non-market disposal such as grain loans. A positive impact of market access is expected in the case of marketed surplus, though it need not necessarily be so in the case of quantity of marketable surplus. In the latter case also, a positive impact is expected as the lack of market access increases consumption at farm level. The very difficulty of marketing might be because of more consumption at farm level, thus, reducing the amount of marketable surplus. However, market access also means greater inducement for consumption caused by market, a factor which can be very important in case of particular crops, if not for all crops.

In Bihar, the marketing problem is multiplied by the large number multiplicity of intermediaries which restrict the flow of marketable surplus generated by big farmers as well as other medium

---

[1] Government of India Report (1937) Marketing of Wheat in India, p-14.

and small farmers. In fact, the agricultural markets in Bihar are dominated by private traders involving *katcha* and *pucca arhatiyas*. wholesale traders and retail traders. Such predominance of intermediaries particularly in the urban or secondary markets facilitates the growth of exploitative mechanism of the agro-markets. This has created vicious cycle of inefficient agro-marketing system in Bihar in general and in North Bihar in particular. This is the main reason of the contribution of the private marketing being overweight against the government controlled marketing system.

3.3 Cooperative Agricultural Marketing System

Cooperative Agricultural Marketing aims at transforming the market structure with its factors such as middlemen and costs of marketing, through cooperative agricultural marketing societies in which the farmers bargain collectively. The available land is utilized in a better way due to available assured agricultural marketing and farmers dominate the cooperative marketing system facilities. Cooperative agricultural marketing societies were known even during pre-independence days. The sugarcane marketing societies were amongst the earliest one established in Bihar. But cooperative agricultural marketing for cereals and other cash crops is not well developed in Bihar. The Bihar State Cooperative Bank was the earliest institutional agency to distribute chemical fertilizer in the state on behalf of the state government[1]. From the mid 1950's onward, the Bihar Cooperative Marketing Union supplied fertilizers. The Bihar State Cooperative Marketing Union (BISCOMAUN) is the

---

[1] Prasad, K.N. (1998), *Dimensions of Development Analysis of an Underdeveloped State*, Concept, New Delhi, p- 448.

sole distributor of fertilizers in Bihar and also the sole government agency for the marketing of agricultural produce.

The government agencies, like the Bihar State Cooperative bank and the BISCOMAUN have been accused by the farmers for supplying low quality seeds and inferior and adulterated fertilizers, besides other corrupt practices. The existing cooperative agricultural societies structure and function-wise are not in harmony with socialist pattern of society envisaged as long ago as in second five year plan.

3.4 Regulation of Agricultural Marketing: Administrative Measures

The government has since long been interested for upgrading agricultural marketing. Cooperative marketing, therefore, emphasized sugarcane sale and purchase. These societies were first to be formed and promoted. Subsequent to Independence, the speed of efforts in this direction got momentum. The Bihar State Warehousing Corporation was setup in 1956-57. In 1965-66 it had two central warehouses and 21 other warehousing corporations. Stocks of food grain were held in order to meet situations of seasonal glut and scarcity. Storage facilities were provided to farmers and advancing of loans from commercial banks on the basis of characteristics of recipients was arranged for. The All India Warehousing Corporation was setup and it managed whole network of warehouses in several towns and *mandies*. Rural godowns were also constructed.

Up to 1958-59 the state government did not grant any financial support to central marketing societies. In 1960 the Bihar Agricultural Produce Market Act was passed and rules of agricultural marketing were framed. In 1964 a market secretary for each agricultural produce marketing committee was appointed by the

government to look after the development of the markets and to help the producers and traders in their daily business transaction. The state agricultural marketing board exercised a general control over the market committee of the state. The board was funded by the state government for marketing development programme.

Under such improved market development programme, the government provided the basic facilities for storing grading and disposal of the agricultural produce as well as for strengthening the existing infrastructure of the market so as to make sure that the farmers secure the best possible returns on their produce. Further it was assured that the consumers receive adequate supplies of good quality food and the traders realize a reasonable margin of profit.

In the 1995-96 Annual Plan the state government had a programme to construct a 100 metric tones capacity godown at each block headquarter. Earlier to this during 1993-94, 293 godowns were already completed and handed over to the State Food Corporation by the Bihar State Food and Civil Supplies Corporation.

Another quite effective method by which the government provides impetus to agricultural marketing is by giving publicity to market information on the radio and television daily and weekly through programs meant for the farmers. This information is related to market price trends of agricultural commodities. Weekly bulletin on prices is also published. Very useful talks are broadcasted /televised involving experts on various aspects of agricultural marketing, in Hindi and other regional languages from the station concerned.

The 1995-96 Annual Plan of Bihar Government also realized the urgent need for increasing the infrastructural facilities meant for agricultural marketing. The state government is keen for

implementing the Standards of Weights and Measured (enforcement) Act, 1985. Grading has made strides in Bihar in recent years under the stewardship of the marketing department of the union of the state government. Tests in laboratories, in this connection, are made for the benefits of the producers of vegetable oil, *ghee*, spices, honey etc, *Gur* is graded and sold under the auspices of a number of unions. In grading agricultural products. their size, colours, weight, etc. are taken into consideration. It is regrettable that the Agricultural Produce Market Acts are not enforced properly and evenly across all parts of the state.

As mentioned earlier, among the principal markets there are wholesale markets and the regulated markets. The presence of marketing yard is cordinal feature of these markets. As a result of the government effort made in the last few years in this direction, more regulated markets are coming up and the marketing structure is getting streamlined.

The regulated markets are directed at improving the existing facilities and practices in the market system. A regulated market yard is a composite market for the growers of agricultural products. In these markets, the charges of brokers and other kinds of marketing costs incurred are determined under the supervision of market committees.

As a matter of fact, the regulated market yard is supposed to become the nucleus for growth of Modern Township around itself. The facilities provided by the regulated market are as follows:

(a) Sale platforms-traders shops.

(b) Storage-godowns and warehouses.

(c) Rest house for farmers.

(d) Parking space for carts and vehicles.

(e) Arrangement for cleaning and grading for the produce.

(f) Post office and banks.

(g) Prompt and up-to-date marketing information.

A regulated market yard provides the following facilities to the cultivators:

(i) Inputs e.g. seeds, fertilizers, pesticides, improved implements etc.

(ii) A workshop where tractors, pumping set, threshers, dryers and sprayers are repaired.

Every regulated market has a network of link roads and approach roads in the radius of about 10 kilometres around each market yard. On an average, every market yard has a pucca road of the length of about 50 kilometres. As such 50 market yards have total length of about 2500 kilometres road length, which caters to the felt needs of cultivators. The link roads and feeder roads facilitate the farmers in their task of bringing their produce to the market yard through pucca roads by the quickest possible means.

With the assistance of World Bank, Bihar has constructed a large number of well developed marketing yards. The rural roads feeding these yards have to bear extra vehicular traffic and it calls for regular maintenance as also improvement and upgrading, which the state can ill-afford because of lack of resources.

Extension officers are available at the regulated markets to impart training at intervals to the cultivators in the yard itself. Here the latest development of agricultural techniques becomes threadbare to the cultivators.

Despite the distinct achievement in this field, some very serious shortcomings exist in these regulated markets. Firstly, the benefits of regulated markets have flown mostly to the big farmers

who have large size of marketable surplus, equipped with transport and other facilities to sell them. Secondly, in the market yards, roads and lanes are congested, narrow and under-developed, without an adequate space for the carts to be parked. Thirdly, on account of inadequacy of the requisite machinery for market development and regulation, the age-old disabilities of the farmers such as underpaying of prices, cheating through unfair weights and harassment through delayed settlement, exploitation through unwarranted deduction still continue to be suffered by them.

3.5 Agricultural Marketing: A Historical Perspective

Agricultural marketing is a process which starts with a decision to produce a saleable farm commodity and it involves every aspect of market structure or system, both functional and institutional, based on technical operations like assembling, grading, storage, transportation and distribution. Under ancient economy, characterized by isolation and self-sufficiency of the village, the marketing of agricultural produce occupied an insignificant position. After the improvement of irrigation facilities and farming techniques along with growing needs of the village population, the commercialization of agriculture took place. This commercialization has opened scope for private trading channels, cooperatives and regulated markets. But due to the ignorance, illiteracy and lack of enterprising ability, a large group of peasants, owning small and marginal size farm, can not strike a profitable bargain in dealing with their farm products.

The small farmers are economically the weakest from the point of view of availability of marketable surplus[1]. A study (RBI, 1968) revealed that about 35 per cent of the total production is sold by the cultivators of which 24 per cent is to the traders and commission agents. Fifteen per cent is disposed of as wages and nearly 8 per cent is kept as reserve for seeds. In the sample division, about one out of every three districts surveyed showed that less than the 15 per cent of the total produce was sold to private traders where as regarding the cash crop areas, out of eight districts more than 45 per cent of produce was sold to professional traders. In another study (Lele 1968)[2], it was found that the food grain markets were highly competitive. Storage of food grain by private traders was not always profitable. In fact, the losses and gains were evenly balanced. Furthermore, the higher price differentials in food grain trade were mainly due to the effect of government controls. It was generally alleged that the private trade, through its speculative activities, create imperfections in the market and exploit the producers on the one hand and consumers on the other. On this account, a plea for state intervention was usually made. It was for regulating agricultural markets in particular.

The first attempt to regulate agricultural markets in India was made in 1897. An act was passed called as Berar Act (1897) which authorized the then British resident, in Hyderabad, to declare any place within his jurisdiction a market for sale and purchase of agricultural produce and constitute a committee to supervise and

---

1 Reserve Bank of India (1969): Report of Rural Credit Review Committee.

2 Lele, U. (1968) *Working of Grain Markets in States of India*, USAID Research Project, Cornel University.

regulate the markets[1]. The law helped to improve the buying and selling of cotton. But it suffered from one major limitation, viz, the market committee consisted solely of traders and this tended to defeat the declared objective of benefiting the producer-sellers. In practice, the law was applied only to cotton, the main crop of the region and did not include grain. Any net income derived from the market was explicitly stipulated and would go to the local municipal authority, instead of being spent back in the market for further development. Thirty year later, with the passage of the Cotton Market Act, 1927 in Bombay, once again, the law was concerned only with a single crop. However, an important departure from the Berar law occurred in Bombay (1927) by giving the due representation to growers in market committee of the concerned markets.

The Royal Commission on Agriculture (1928), reporting a year later, urged that all provinces should establish regulated markets to help orderly marketing of all agricultural produce. It deprecated the practice of treating regulated markets as a source of municipal revenue and insisted on that the revenues and any surplus income generated through the regulated markets must be used solely to develop and improve the facilities and services for the benefits of the producers in the markets. Hyderabad Central Province and Madras promptly acted on the Royal Commission's recommendations and passed appropriate legislation. Others followed after a long interval: Punjab and Mysore introduced the act in 1939, though this act was not operative until 1948, Madhya Pradesh implemented this act in 1953, Kerala and Orissa in 1957. At the beginning of the third plan (1961) the act was introduced and implemented in nine states. Four

---

1 Cotton and Grain Markets Act of Hyderabad Assigned District, 1897 or so called *Berar Law*.

more states enacted the Agricultural Produce Markets Act by 1968, and remaining states, viz, Assam, Nagaland, Kerala, and Jammu & Kashmir did so during the Fourth Plan period[1] (1969). Bihar state passed the act during 1962 and established a number of regulated markets.

The regulated markets established in different states show much similarity today, both in law and in actual practice. This is largely due to the fact that all state laws of regulated markets are on the same model bill prepared by the central government in 1938. But actual growth of regulated markets and their geographical distribution are highly uneven. They are well developed in Maharashtra and Gujarat followed by Punjab and Madhya Pradesh. Another significant fact about them is their heavy concentration in the cotton growing states. This largely explains why in 1964, eighty per cent of a total of 1000 regulated markets in India were located in the five western states, although together they accounted for only thirty per cent population of India. Thus, despite the expostulation of Royal Commission of 1928, the progress made with regulated markets in the intervening decades had been slow. While they are still fully inadequate in coverage. They are largely confined to cotton and do not embrace other agricultural produce. Three decades back very few regulated markets were seen in Uttar Pradesh, West Bengal and Assam.

It was realized that the market regulation was not enough to attract the traders and farmers to take up full advantage of the regulated markets. It was because of lack of sufficient infrastructure.

---

1 Government of India: *Activities of Directorate of Marketing and Inspection*, Ministry of Agriculture and Rural Development, 1985, pp.2-3.

Then a central sector scheme was initiated for the development of selected regulated markets in the year 1972-73. The provision during the year 1985-86 was 403 lakhs for assisting 30 selected regulated markets and 10 terminal markets.

Towards the end of the 1970's, it was realized that the development of rural markets like *haats* and *shandis* was equally helpful for the marginal and small farmers. The government expended its financial support worth Rs 1.5 lakh per market for the development of infrastructure in the primary rural markets and Rs 5 lakhs for wholesale rural markets situated in the backward areas.

3.6 Agricultural Marketing through the Five Year Plans

Production in agriculture is seasonal as the crop is harvested during a short period of few months and consumed gradually. Due to this situation the farmer has to dispose of this surplus immediately either at mandi or at village market. The sale of agricultural produce involves a number of functions such as assembling, grading, standardization and transportation etc. Some of these functions are performed at farmer's level while some need the specialized back-up. The middlemen, who perform these services, require reasonable return. But many times it is found that unwarranted advantages go to this group reducing the farmers' shares in the final price.

During the First Five Year Plan (1951-56) period, the regulated markets were established in Maharashtra, Madras, Punjab, Hyderabad, Mysore and Madhya Pradesh where the management of these markets was vested in the hand of committees in which there was participation of growers as well. Some of the states like Uttar Pradesh, West Bengal, Bihar and Orissa, despite promulgating the Agricultural Produce Marketing Act (APM), could not enact it in

large number of unorganized markets in the countryside. Moreover, states were given priority in implementing the APM act in all the regions. Apart from the regulations of agricultural produce markets, the main thrust was laid on the development of cooperative marketing linked with production, finance and cooperative ownership of processing industries. It will be a useful instrument for increasing production, costs and introducing a system of crop planning[1].

The primary consideration for the development of agricultural marketing in the Second Five Year Plan (1956-61) was to recognize the existing system so as to protect the farmers' due shares of consumers' price of different agricultural commodities. The second plan also stressed on the enactment of APM Act in the states not covered during First Plan period, including grading and standardizing of farm products[2].

The total number of agricultural produce markets in the country at the end of second plan was about 2500; out of these numbers of regulated markets were 725 as compared to 425 in the first plan. The Third Five Year Plan (61-66) proposed to bring the remaining markets under regulation and to expand the programme for grading the commodities. Third plan was also devoted towards the co-operative marketing[3] .

By and large, the fourth five year plan (1969-74) aimed to improve the agricultural marketing system in the interest of producer. The objective was to see the imperfections in the marketing system and to overcome the constraints. During this plan period, 1300 additional markets were proposed to be covered. The development of

---

1 Government of India: First Five Year Plan, Planning Commission, pp.243-244.

2 Government of India: Second Five Year Plan, Planning Commission, pp.276-281.

3 Government of India : Third Five Year Plan, Planning Commission, p.321

infrastructure was identified as one of the major task to be carried and the roads, market yards, grading units including other common amenities were stratified for immediate attention[1].

The development of agricultural marketing was planned through the ways and means of co-operatives during Fifth Five Year Plan (1974-79). The Plan envisaged the set-up of various cooperative marketing unions for the commodities and also of boards to regulate the trading system of the cash crops[2].

The main emphasis of the Sixth Five Year Plan (1980-85) was therefore on (a) further expansion of regulated market system in terms of increasing number of markets and commodities to be brought within the scope of regulation, (b) strengthening and streamlining the arrangements for enforcement/inspections to ensure a regulated system of open auction, trading practices and intermediaries, and (c) development of rural and periodic markets[3].

During Sixth Plan period, the progress and development of markets was intensified with the emphasis on survey research and grading of notified commodities. The main thrust of the marketing programme during Seventh Five Year Plan period (1985-90) was towards further expansion of regulated markets, both in terms of area and coverage. Provision of certain facilities was also acknowledged like the grading centers at the producers level, intensive surveys to asses the marketable surplus and the post-harvest losses and strengthening of various organizations in the states as well as centres

---

1 Government of India Forth Five Year Plan, Planning Commission, pp 142-143

2 Government of India Fifth Five Year Plan, Planning Commission, part II pp 83-91

3 Government of India Sixth Five Year Plan, Planning Commission p 112

for meeting the rising requirements of training of market functionaries[1].

The document of Eighth Five Year Plan (1992-97) envisages strengthening of market infrastructure with special reference to the perishable commodities. It is one of the major pre-requisites for the success of diversified efforts and enabling primary producers to realize a fair share of price in consumers' rupees. The plan document endorses the need of developing marketing linkages within and outside the country to promote diversification. The role of cooperatives in setting of new horizons for domestic marketing is also argued in the Eight Plan. The commercialization of farming system and the new seed policy for promoting non-conventional commodities such as flowers and export-oriented vegetables has made considerable impact on agri-business in the recent past[2].

Ninth plan (1997-2002) evaluates that the infrastructure has not kept pace with accelerated growth of agricultural production in the country. This has resulted in significant post-harvest losses of agricultural produce. The central government has provided assistance for creation of infrastructural facilities for marketing and for setting up rural godowns. During this period emphasis has been given to develop marketing infrastructure at *panchayat* level[3]

During Tenth Plan (2002-2007) it has been found that marketing system is dominated by traders. Appropriate and effective linkages between the producers and sellers continue to be weak.

---

1 Government of India: Seventh Five Year Plan, Planning Commission, Part II, p. 20.

2 Government of India: Eight Five Year Plan, Planning Commission, Part II, pp. 11-12.

3 Government of India: Ninth Five Year Plan, Planning Commission, Part II, p. 450.

The absence of rural connectivity and other infrastructure, combined with improper management, lack of market intelligence and inadequate credit support has resulted in a system that is unfavorable to the farmers.

The basic objective of setting up a network of markets is to ensure reasonable profits to the farmers by creating a conducive environment for the free and fair play of supply and demand forces to regulate market practices and insure transparency in transportations. Apart from dealing with current imperfections and shortcomings the government has recognized the importance of liberalizing agriculture markets in the wake of inception World Trade Organization (WTO)[1].

3.7 State Intervention: A Step Forward

The agricultural marketing system in the country suffers from various kinds of imperfection both in specialized as well as in grassroots markets as *haats*. It is projected by many studies that traditional markets for agricultural commodities do not effectively perform the function of price signalling and that there are huge differences between prices paid by the consumer and those received by the producers, both in terms of time and space. It is caused by monopolistic profits existing in a private trade. Therefore it necessitates the provision of alternative marketing channels in public and cooperative sectors. But the co-operative marketing has not made much headway in the country. Thus the state intervention in the agriculture marketing is urgently required and justified. The state intervention in the unorganized agricultural market, has led to the policy formulation for regulating the agricultural product markets in India.

---

[1] Government of India: Tenth Five Year Plan, Planning Commission, Part II, pp.550-551.

It was observed in the Economic Survey (1994-95) that the agricultural marketing in the country was, by and large, operated under balancing force of demand and supply but the private trade is the centerpiece of the marketing mechanism. The government intervention was limited mainly in regulating the trade of farm products[1]. The administrative structure for implementing agricultural marketing policies at the state level varies considerably from state to state both with regard to extent of autonomy enjoyed as well as relative status of marketing division vis-a-vis the agencies responsible for agricultural production. On the one hand, there are completely independent directorates of agricultural marketing as in Andhra Pradesh, Rajasthan, and Maharashtra. Further, there is an arrangement of entrusting all work relating to agricultural marketing to a small section, forming a part of the directorate of Agriculture as in the state of Kerala, Madhya Pradesh, Assam, etc. Between these two categories, there are states like Karnataka and West Bengal, where agricultural marketing is handled by an autonomous section, which, however, functions under a department either belonging to cooperatives or agriculture. At the state level, sometimes decisions related to agricultural marketing are guided by the food department, civil supplies department, state warehousing corporations, state marketing boards and other similar organizations/agencies.

3.8 Private Trade: Role and Relevance

Only a few studies are undertaken to take into account the economic behaviour of private traders engaged in agricultural marketing. A trader may be considered as an entrepreneur having abilities to take high risk and willingness to experiment with different

---

[1] Government of India: Economic Survey (1994-95), Economic Division, Ministry of Finance, pp 132-133.

trade relationships and strategies[1]. The private trader's marketing behaviour, by and large, possesses as psychological and social link with the rural community as compared to wholesale trader who has merely economic relationship. By virtue of their linkage effects[2], such agricultural traders may form decentralized rural growth centre. Brookfield (1975)[3] argues that the private traders' psycho-social linkage with the farmers, by providing inputs for investment goods and by marketing products, has commercialized the country side. London (1975)[4] contends that the private traders are highly competitive in terms of structure variables, such as number of clients, and size and distribution of business involved. The private trade is also highly efficient in terms of resource allocation as evinced by analysis of price margins. He further states that private trade is more labour intensive than alternative form of trading organization[5].

Apart from the transactional behaviour of buyer-seller in the markets of private trade domination, topography, location, spatial and temporal distribution of markets and its hinterland also account for establishing the trade system to a large extent[6]. Studies to this effect are contributed by Patnayek (1953)[7] Tamaskar (1966)[8], Wayne

---

1 Long, M. (1977) *An Introduction to the Sociology of Rural Development*, Tavistock, London, p.128.

2 Sen, L. K. (1975) *Readings on Micro Level Planning and Growth Centers*, National Institute of Rural Development, Hyderabad, pp.3-9.

3 Brookfield, H. (1975) *Independent Development*, Methuen, London, pp.85-123.

4 London, P. (1975) *Merchant as a Promoters of Rural Development*: An Indian Case Study, Praeger, New York, Chapter.6

5 Ibid.

6 Gopal, R. (2001) *Rural Marketing*, Rawat Publication Company, New Delhi, p 30

7 Patnayak, N. (1953) Study of Weekly Market at Bonpati, *Geographical Review of India*, XV (1) pp.19-31.

8 Tamaskar, B.G. (1966) The Weekly Markets of Sagar-Damah Plateau, *The National Geographical Journal*

(1972)[1], Jana (1978)[2], Rajgopal (1986)[3] and many others. They have discussed the commodity flow, trade channels, trading pattern, market size and spatial and temporal distribution of markets, market classification and levels.

Many studies show that the small farmers are at very disadvantageous position in marketing of their marketable surplus as compared to big framers due to lack of knowledge of trade techniques, limited storage capacity as well as their indebtedness. Identifying such economic character of small farmers, Satyanarayana (1984)[4] pointed out the above discussed attributes which are the reason for bulk sale of production in village market and monopolistic practices followed by money lenders and itinerant traders. Rudra (1984)[5] pointed out the impact of power configuration of local private traders on the small farmers' and marketing behaviour of agricultural products. The small farmers are usually confined to village markets for their agricultural surplus transaction. So far as they deal with big farmers, they are subjected to local power vested with them. It can be undoubtedly said that the power structure in any commodity or sector of activity has the direct and indirect relationship with the moneylenders. Such a condition in rural markets has an impact on the price trend, and the benefit ultimately goes to

---

1 Wayne, M (1972) The Periodic Market System in North Eastern Ghana, *Economic Geography*, 40, pp 333-344

2 Jana, M M (1978) Hierarchy of Market Centers in Sabarmati Bana ,*Geographical Review of India*, 40, pp 164-174

3 Rajagopal (1986) *Dynamics of Agricultural Marketing in India*, Rainbow Publications, Coimbatore

4 Satyanarayana et al (1984) Small Farmers in Product Market, *Kurukshetra*, 13 (2), p 24

5 Rudra, A (1984) Local Power Structure and Farm Level Decision in Desai Meghvad et al (ed) *Agrarian Power and Agricultural Productivity in South Asia*, Oxford, pp 250-280

the medium and large farmers who have ties with the traders, middlemen and big merchant at terminal markets[1]. The traders lend advance money to the farmers and align the procurement system. The Reserve Bank of India (RBI-1969), in a study, explores that about 35 per cent of the total production is sold by cultivators, of which 24 per cent is dependent on traders and commission agents[2]. Henry (1954)[3] examined the speculative activities of trading community in India.

Highlighting the collusive behaviour of India's trading community as main reason, Dantwala (1961)[4] and Miller (1968)[5] state that wide marketing network and substantial exploitation of consumers and producers. accompanied by the inefficiency in rendering of services and low productivity in the case of the capital, labour and research have also been other important reasons for the state intervention in the marketing and management of food grains and essential commodities. The traders and their activities have always been held responsible for food strategies, speculative demand and supply etc and spiralling of the prices by political influences. As a result of the activities of traders, the common man has been the worst sufferer and the burden has come to rest on the government to intervene to safeguard the interest of producers and consumers. The government, therefore, instead of relying completely on the traders,

---

1 Ibid

2 Researve Bank of India (1969) *Report of Rural Credit Review Committee*, New Delhi

3 Henery, K. (1954) *Food Administration in India*, Stand Ford University, California, p.31.

4 Dantwala, M.L. (1961) *India's Food Problem*, Asia Publishing House, Bombay, p.17.

5 Millor, J.W. (1968) The Function of Agricultural Press in Economic Development, *Indian Journal of Agricultural Economics*, 23 (1)

has preferred to intervene, regulate and, if necessary, operate in the field of procurement and distribution management.

3.9 Cooperative Marketing : Future Prospect

The need of cooperative marketing in India arose due to a number of reasons. Of these the first factor was the prevalence of malpractices in the existing marketing system with a view to discourage these phenomena the cooperative marketing society was introduced. The cooperative movement towards marketing activities was accorded considerable importance in the First Five Year Plan. But these activities remained at low level of progress[1]. The stress has been given to recognize the marketing cooperatives to make them more viable during the Fourth Five Year Plan. The two-tier organizational pattern of cooperatives was recommended with an apex organization at state level and primary marketing societies at the *mandi* level. The efficiency of marketing is highly dependent upon the institutional structure of transaction of commodities. Food and Agricultural Organization (FAO), earmarking the contribution of cooperatives in regional economic development, states that there are some factors which have direct involvement in the promotional policies of the commercial sectors with reference to small farmers. The farmers marketing cooperatives have been chosen as an instrument for development of commercial sector of small farmers by providing leadership to the cultivators without state intervention. The marketing of agricultural produce by the cooperatives received a set back during recent past because of :

---

[1] Mathur, B.S. (1971) *Cooperatives in India,* Sahitia Bhavan, Allahabad, p.357.

(a) inadequate coverage of number of growers;

(b) low volume transaction of marketing services societies;

(c) inadequate link between marketing and processing cooperatives and of the state federation; and

(d) inadequate financial resources.

The marketing cooperatives at the primary level do not have adequate resources either to undertake marketing cooperation at massive scale or to absorb the loses.

Apart from these institutional constraints, human factor is also equally important which affects the growth of the marketing cooperatives, like (i) lack of loyalty towards organization and understanding of cooperative principles; (ii) shortage of efficient management personnel and lack of training; and (iii) low level of salaries, absence of promotional prospects and poor communication, are basic factors which lead to the negative growth of marketing cooperatives[1]. On the whole, commodity-wise marketing and processing of agricultural produce by the cooperatives has not made any significant impact in the marketing network. However, there are few exceptions like milk, sugarcane and cotton where cooperative sector is dominant and has shown tremendous dynamism in the western region of India. This is because of horizontal organization linkages established by the cooperative through integrated approach. Despite few success stories there are certain issues which yet remain as pillar to withhold the growth in the cooperative sector. The most important question to be asked is: will cooperatives be able to withstand in the new economic order ?.

---

[1] Reports of Regional Seminar on Management of Agricultural Cooperatives with reference to Multipurpose Cooperatives, International Cooperatives Alliance, New Delhi (1978). pp.2-5

References

(1) Brookfield, H. (1975) *Independent Development,* Methuen, London, pp.85-123.

(2) *Cotton and Grain Markets Act of Hyderabad* Assigned District, 1987 or so called Berar Law.

(3) Cohen, R. (1958) *The Economics of Agriculture*, Cambridge, p. 88.

(4) Dantwala, M.L. (1961) *India's Food Problem*, Asia Publishing House, Bombay, p.17.

(5) Gopal, R. (2001) *Rural Marketing*, Rawat Publication Company, New Delhi, p. 30.

(6) Government of India Report (1937) *Marketing of Wheat in India,* p.14.

(7) Government of India: *Activities of Directorate of Marketing and Inspection,* Ministry of Agriculture and Rural Development, 1985, pp.2-3.

(8) Government of India: First Five Year Plan, (1951-56), Planning Commission, pp.243-244.

(9) Government of India: Second Five Year Plan, (1956-61), Planning Commission, pp.276-281.

(10) Government of India : Third Five Year Plan, (1961-66),Planning Commission, p.321

(11) Government of India : Forth Five Year Plan, (1969-74), Planning Commission, pp.142-143

(12) Government of India: Fifth Five Year Plan, (1974-79), Planning Commission, part.II, pp.83-91.

(13) Government of India: Sixth Five Year Plan,(1980-85), Planning Commission, p. 112.

(14) Government of India: Seventh Five Year Plan,(1985-90), Planning Commission, part.II, p. 20.

(15) Government of India: Eight Five Year Plan, (1992-97), Planning Commission, Part II, pp. 11-12.

(16) Government of India: Ninth Five Year Plan, (1997-2002), Planning Commission. Part II, pp. 450.

(17) Government of India: Tenth Five Year Plan, (2002-2007), Planning Commission. Part II, pp.550-551.

(18) Government of India: Economic Survey (1994-95), Economic Division, Ministry of Finance, pp 132-133.

(19) Henery, K. (1954) *Food Administration in India,* Stand Ford University, California, p.31.

(20) Jana, M.M.(1978) Hierarchy of Market Centres in Sabarmati Bana, *Geographical Review of India,* 40, pp. 164-174.

(21) Khols, R.L (1967) *Marketing of Agricultural Products*, The Mac Millan Company, p.1

(22) Kulkarni, K.R. (1956) *Agricultural Marketing in India*, vol.1, Bombay.PP.2-12.

(23) Lele, U. (1968) *Working of Grain Markets in States of India*, USAID Research Project, Cornel University.

(24) Long, M. (1977) *An Introduction to the Sociology of Rural Development,* Tavistock, London, p.128.

(25) London, P. (1975) *Merchant as a Promoters of Rural Development: An Indian Case Study,* Praeger, New York, Chapter.6

(26) Mathur, B.S. (1971) *Cooperatives in India*, Sahitiya Bhavan, Allahabad, p.357.

(27) Millor, J.W (1968) The Function of Agricultural Press in Economic Development, *Indian Journal of Agricultural Economics*, 23 (1).

(28) Patnayak, N. (1953) Study of Weekly Market at Bonpati, *Geographical Review of India*, XV (1) pp.19-31.

(29) Prasad, J. (1979) Agricultural Marketing in Bihar: Socio-Economic Constraints, *Yojna*, No 13, p. 24.

(30) Prasad, J. (1989) *Marketable Surplus and Market Performance*, Mittal Publication, Delhi, p.31.

(31) Prasad, K.N. (1998) *Dimensions of Development Analysis of an Underdeveloped State*, Concept, New Delhi, p. 448.

(32) Rajagopal (1986) *Dynamics of Agricultural Marketing in India,* Rainbow Publications, Coimbatore

(33) Reserve Bank of India: *Report of Rural Credit Review Committee*, 1969.

(34) Rudra, A. (1984) Local Power Structure and Farm Level Decision in Desai Meghvad et al (ed) *Agrarian Power and Agricultural Productivity in South Asia,* Oxford, pp.250-280.

(35) Saxena,P. (2003) *Marketing and Sustainable Development*, Rawat Publication, New Delhi.

(36) Satyanarayana et al (1984) Small Farmers in Product Market, *Kurukshetra*, 13 (2), p.24.

(37) Sen, L. K. (1975) *Readings on Micro Level Planning and Growth Centers*, National Institute of Rural Development, Hyderabad, pp.3-9.

(38) Sinha, G.N. (1956*) An Introduction to Food Economics*, Allahabad, pp. 79-80.

(39) Subbarao,K. (1989) *Agricultural Marketing and Credit*, Monograph.2, Research in Economics, Secondary Survey, Indian Council of Social Research, New Delhi, p.1.

(40) Tamaskar, B.G. (1966) The Weekly Markets of Sagar-Damah Plateau, *The National Geographical Journal*.

(41) Wayne, M. (1972) The Periodic Market System in North Eastern Ghana, *Economic Ge*

(42) *ography*, 40, pp.333-344.

CHAPTER-4

SYSTEM OF AGRICULTURAL MARKETING: ARARIA DISTRICT

4.1 Introduction

Agricultural marketing is the performance of all business activities involved in the flow of goods and services from the point of initial agricultural production until they are in the hands of consumer[1]. Among the various forms of marketing, the marketing of agricultural products is of prime importance, because it provides food to the billions of people throughout the world. The development of agricultural marketing is closely associated with the development of agriculture, especially when surplus production starts. From village exchange system it has now grown into not only national but as international system as well. Thus, agricultural marketing is a system through which commodities are moved from farmers' home to ultimate consumers'[2]. During this entire process the commodity moves from one hand to another hand and also from one place to another place. But all these actions and events take place in the some sequence which is known as marketing system.

The agricultural marketing system starts with the farmer and his production, while at the other end of the system is the consumer. The process starts with movement of farm products to the market and its contact with business firms or traders. The factors affecting this contact are transportation, communication, system of law and order and monetary system, which are associated with business management activities. The actual buying and selling activities are done under certain norms and also under some organizational system. And ultimately, the products first being purchased by traders/wholesalers or

---

1 Khols, R.L.(1967), *Marketing of Agricultural Products*, 3rd ed, Machmillan, London, P.9.

2 Khan, N. (1999), Role of Periodic Markets in Agricultural Marketing System in *Commercial Activities and Development in Ganga Basin,* ed V.K Srivastva, Concept Publication Company, New Delhi, p. 341.

retailers through middlemen/agents and other internal agencies, reach the consumers. In fact, agricultural marketing functions are the activities that are to be performed during marketing of any farm products and all these functions are inter-linked with each other, thus forming a part of efficient marketing system[1].

4.2 The Nature of Agriculture Trading System

In the study area the agricultural products are marketed through different agencies. The farmers sell their surplus of different commodities mainly through two types of trading system:

Private Trading System (Informal Agencies), and

Public Trading System (Formal Agencies).

4.2.1. Private Trading System (Informal Agencies)

In the private trading system the purchasing agents work as an independent body, on individualistic basis. They are in themselves responsible for profit and loss in the trade. Wholesale traders, village traders, itinerant traders, commission agents and so on are included in the group of private trading agencies who purchase the agricultural surplus from producers at free rate on the basis of price agreement between producer-sellers and buyers. This transaction takes place in the village as well as at market centre. In this system the farmers, especially the small and marginal farmers, are exploited by traders on account of their indebtedness, small size of surplus and ignorance of market price and rules[2].

The informal agencies are concerned with private trading system. These are private mills, periodic rural markets, direct farm gate sale and

---

1 Saxena, P (2003), *Marketing and Sustainable Development*, Rawat Publication, Jaipur , P 101

2 Amani,K Z & Khan, N (1989), Agricultural Marketing in Uttar Pradesh, The *Geographer*, Vol XXXVI, No 2, pp-7-17

so on. Periodic market is one of the important informal agencies of agricultural marketing system. Table-4.1 gives the details of marketed surplus of different commodities purchased through various agencies.

Table-4.1
Purchase of Major Agricultural Commodities by Different Agencies in Araria District (2002-2003)

SN	Marketing Agencies	Paddy	Rice	Wheat	Maize	Pulses	Potato	Onion
1.Formal Agencies								
a	FCI	12727 (5.40)	-	36612 (19.5)	-	-	-	-
b	SFC	4260 (1.81)	-	21720 (11.83)	-	-	-	-
c	Marketing	-	-	-	-	-	-	-
d	Regulated Markets	57620 (24.45)	139936 (63.4)	59215 (32.26)	11660 (74.27)	7647 (48.71)	29110 (59.29)	23375 (49.82)
2.Informal Agencies								
a	Mills	140320 (55.55)	-	-	-	-	-	-
b	Private Traders	NA	NA	NA	NA	NA	NA	NA
c	Periodic Markets	20717 (8.79)	80784 (36.60)	65994 (35.96)	4037.5 (25.73)	8051.0 (51.29)	20034.5 (40.71)	23545 (50.18)
d	At Home by Consumer	NA	NA	NA	NA	NA	NA	NA

Source: *District Statistical Magazine, Mandi Samiti Araria and field survey*

It is found from survey that paddy has been purchased by mills in largest quantities amounting 55.55 per cent (140320 quintals) of total purchase. It is followed by 8.79 per cent (20717 quintals) marketed surplus of paddy purchased in periodic markets through different informal marketing agencies in the study area, during 2002-2003. Similarly, rice has its share of 36.60 per cent (80784 quintals), while wheat 35.96 per cent (65994 quintals), maize 25.73 per cent (4037.5 quintals), pulses 51.29 per cent (8051.2 quintals), potato and onion 40.77 per cent (20034.5 quintals) and 50.18 per cent (23545 quintals)

respectively to the total transaction of marketed surplus in periodic markets during same period as evident from Table- 4.1.

4.2.2 Public Trading System (Formal Agencies)

The public or government agricultural trading system has come into existence with a view to ensure fair price for producer's surplus as an incentive to increase the production, to supply essential commodities to the consumer at reasonable price, to minimize seasonal fluctuation in price and to undertake procurement for maintenance of buffer stock. The main public trading agencies are Food Corporation of India (FCI), State Food Corporation (SFC) and Bihar State Cooperative Marketing Union (BISCOMAUN). All these trading agencies undertake the purchase of different commodities under the scheme of procurement and minimum support price declared by either the central or the state government.

Under the category of formal agencies, regulated markets are one of the important agencies of agricultural marketing system. They have accounted for transaction of 24.45 per cent (57620 quintals) of paddy, 63.4 per cent (139936 quintals) of rice, 32.26 per cent (59215 quintals) of wheat, 32.26 per cent (11660 quintals) of maize, and 48.71 per cent (7647 quintals) of pulses of the total transaction of marketed surplus of these agro-commodities respectively through formal system during 2002-2003. Similarly onion and potato, under category of vegetables have also shown higher transaction through regulated markets. These regulated markets have a share of 59.29 per cent (29110 quintals) and 49.82 per cent (23375 quintals) of these two crops to their total transactions which have been undertaken by agencies of formal marketing system. Other government agencies like FCI and SFC have made a purchase of only wheat and paddy to minimize seasonal

fluctuation and to undertake procurement for maintenance of buffer stock. They have purchased 12727, 4260 quintals of paddy and 21720, 36612 quintals wheat respectively during the same period.

Table –4.2
Agricultural Products Marketed at Different Stages in Araria District (2002-2003).

SN	Market Agencies	Paddy	Rice	Wheat	Maize	Pulses	Potato	Onion
1	Consumer at home	8	26	20	40	6	9	20
2	Village Traders	20	29	32	20	60	20	22
3	Village Markets	14.9	10.3	10.5	4	10	13	25.3
4	Village Shops	1.6	3	3.1	4	-	-	-
5	Town Markets	3	4	6	8	6.8	11	-
6	Wholesale Markets	10	9	11	12	8	22	7.7
7	Regulated Markets	24.5	18.7	9.4	12	9.2	25	25
8	Government Agencies	12	-	8	-	-	-	-
9	Mills	6	-	-	-	-	-	-

Source: Field Survey 2002-2003. *(Unit in percent)*

Table-4.2 indicates the proportion of marketed surplus at different stages of agricultural marketing agencies in Araria district. These stages of marketing agencies include direct purchase at home, village traders, village markets, village shops, town markets, wholesale markets, regulated markets, government agencies and mills of different commodities in the study area. Regulated markets have recorded highest share 24.5 per cent of marketed surplus of paddy. While in village markets, vegetables especially onion has been contributed in largest proportion of their total marketed surplus among different

stages of marketing agencies in the study area. It is followed by paddy with 14.9 per cent, potato with 13 per cent, wheat with 10.5 per cent, and rice amounting 10.3 per cent of their total marketed surplus respectively. The village traders are found very important agent of marketed surplus of agricultural products in several areas of the study region. 20 per cent of marketed surplus of paddy, 29 per cent of rice, 32 per cent of wheat, 20 per cent of maize, 60 per cent of pulses, 20 per cent of potato and 22 per cent of onion have been marketed through village traders in the villages, specifically by small and marginal farmers who reported to have very small size of marketable surplus. This factor discourages them to sell their surplus in distant specialized agricultural markets to avoid unnecessary transport and time cost[1].

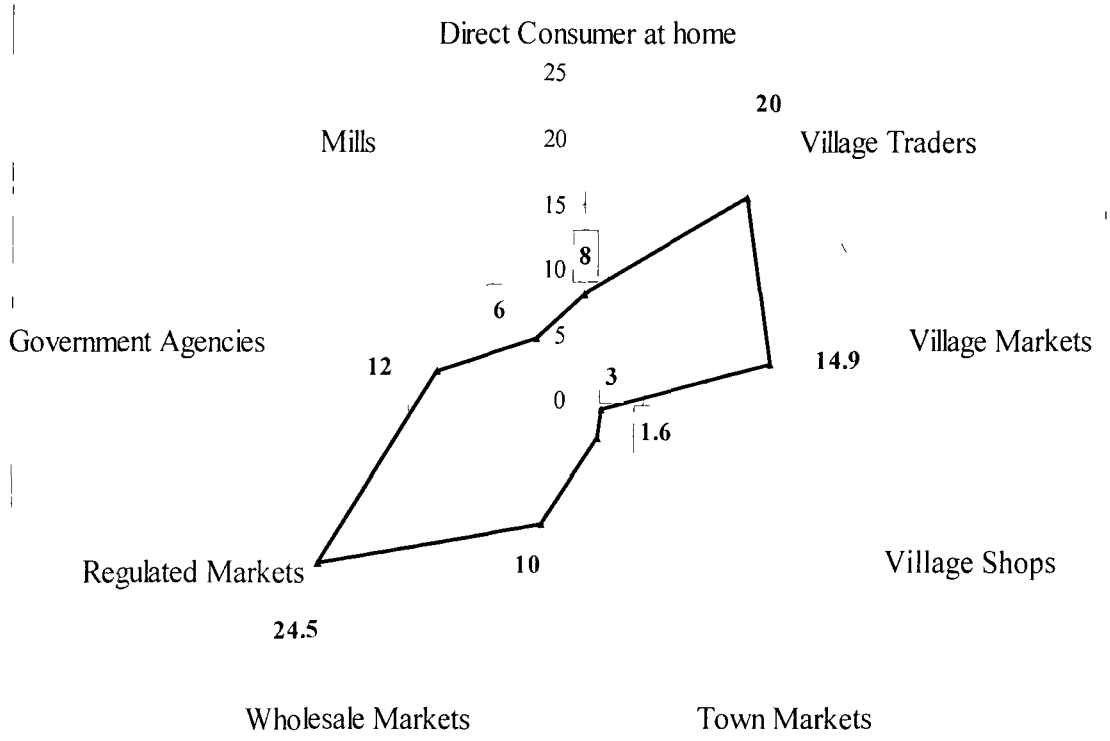
The purchase of agricultural produces by consumers directly from the growers'/farmers' house is another important agency of agricultural marketing in the area as evident from the survey. Study shows that 40 per cent of marketed surplus of maize, 26 per cent of rice, 20 per cent of wheat, 20 per cent of onion, 8 per cent of paddy and 6 per cent of pulses were marketed through direct marketing. In this marketing, margin of commission agents to consumers' price is reduced, as it is the smallest chain of all marketing channels. So both farmers and consumers get benefit[2]. Besides, the time of consumers (usually agricultural and land less laborer) is also saved in which they can earn more wages. It is a dominant characteristic of direct marketing especially between direct consumer and producers in Araria District of Bihar.

---

1 Amani,K Z and Khan,N (1993) Spatial Behaviour of Consumers and Traders in Periodic Markets in a North Indian State A Case Study, *Asian Profile*, Vol, 21 No 3, p 245

2 Khan, N (1988) Direct Marketing in Agriculture in Faizabad District, *The Geographer*, Vol XXXV, No 2, pp 68-79.

PROPORTION OF PADDY MARKETED AT DIFFERENT STAGES IN ARARIA DISTRICT 2002-2003

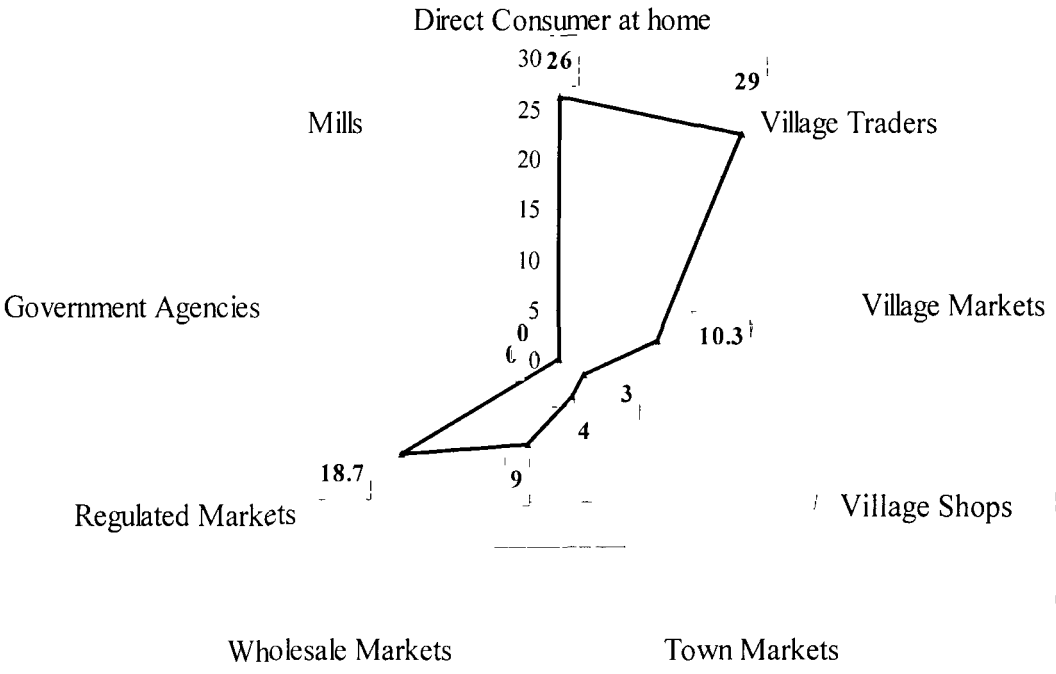


***Thick line represents percentage of marketed surplus at different stages in the district**

Fig -4.1

PROPORTION OF RICE MARKETED AT DIFFERENT STAGES IN ARARIA DISTRICT

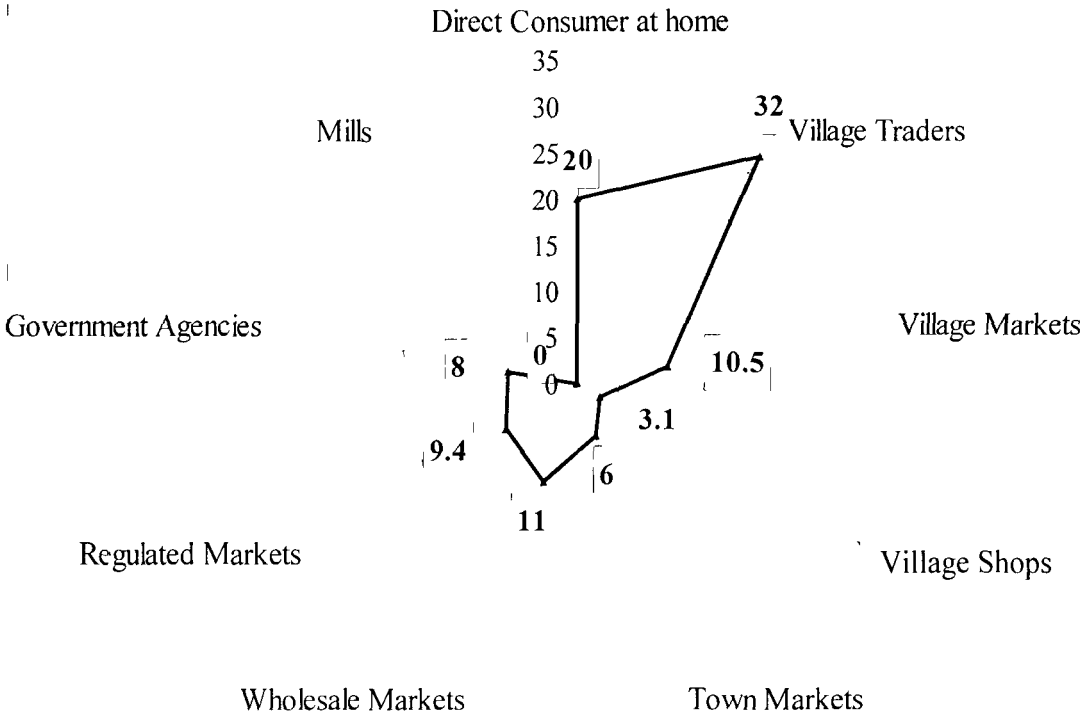
2002-2003



***Thick line represents percentage of marketed surplus at different stages in the district**

Fig.No-4.2

PROPORTION OF WHEAT MARKETED AT DIFFERENT STAGES IN ARARIA DISTRICT
2002-2003

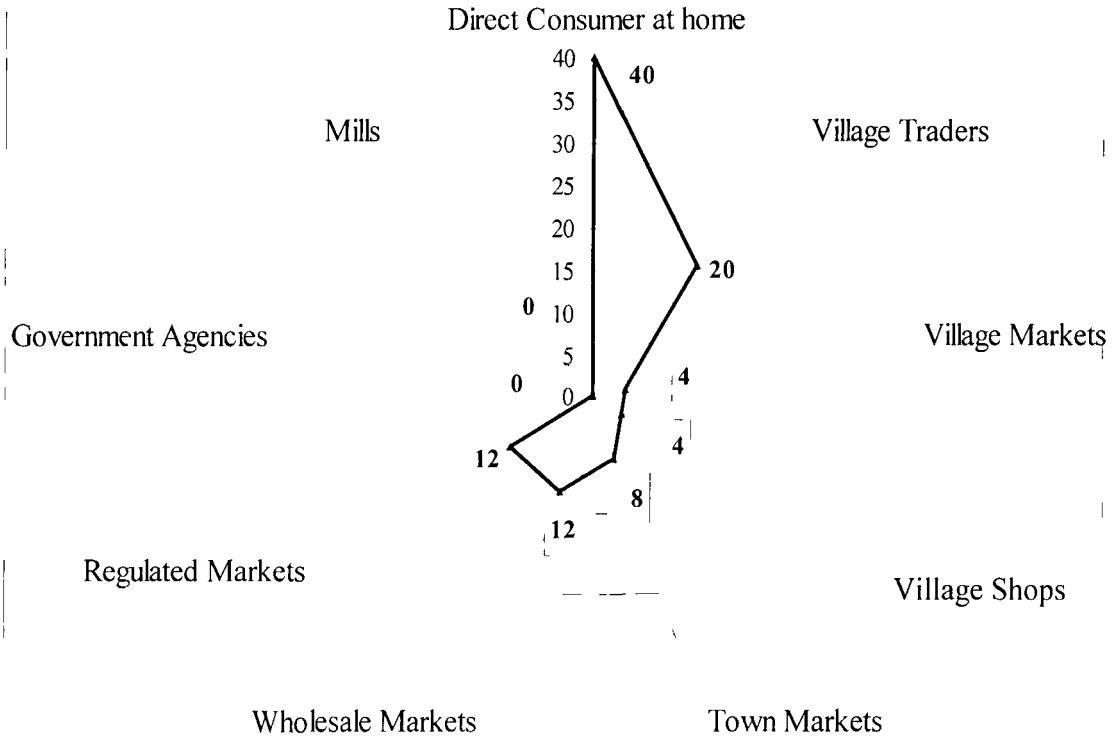


***Thick line represents percentage of marketed surplus at different stages in the district**

Fig -4.3

PROPORTION OF MAIZE MARKETED AT DIFFERENT STAGES IN ARARIA DISTRICT

2002-2003

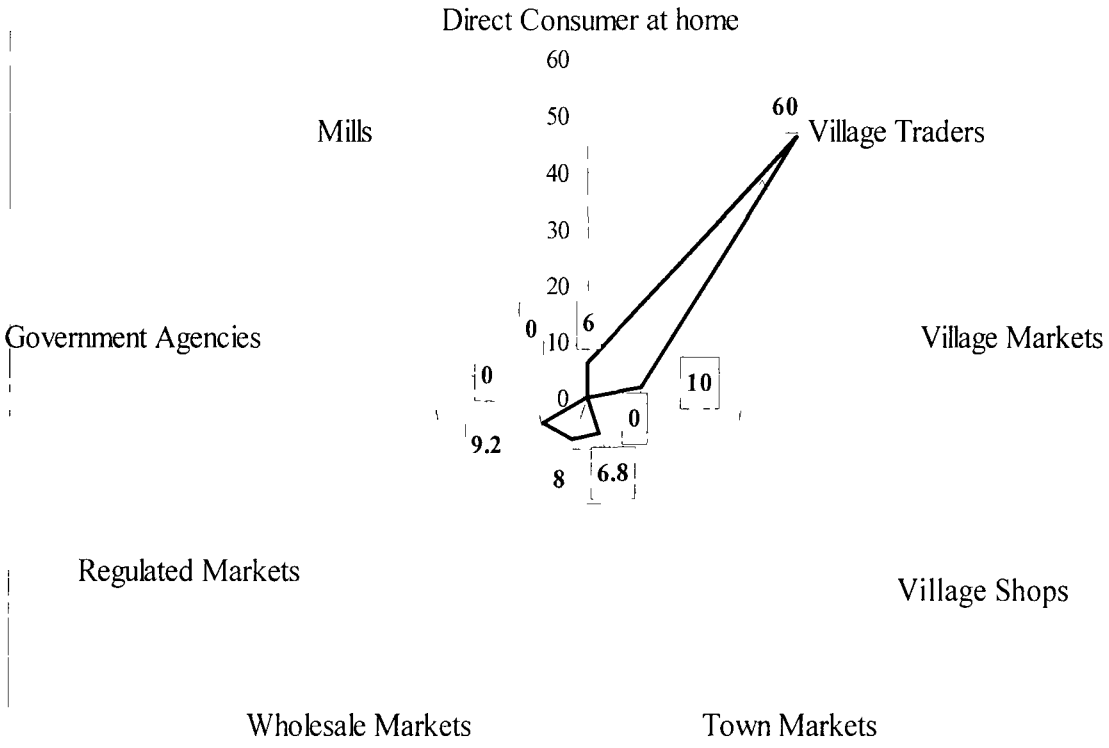


*Thick line represents percentage of marketed surplus at different stages in the district

Fig -4.4

PROPORTION OF PULSES MARKETED AT DIFFERENT STAGES IN ARARIA DISTRICT

2002-2003

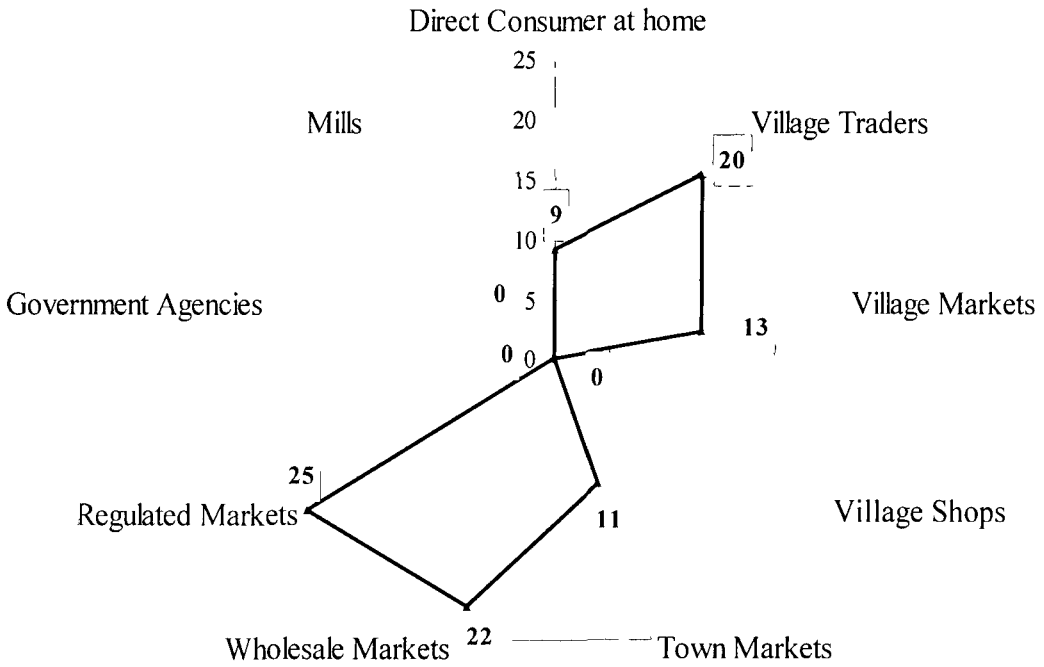


***Thick line represents percentage of marketed surplus at different stages in the district**

Fig -4.5

PROPORTION OF POTATO MARKETED AT DIFFERENT STAGES IN ARARIA DISTRICT

2002-2003

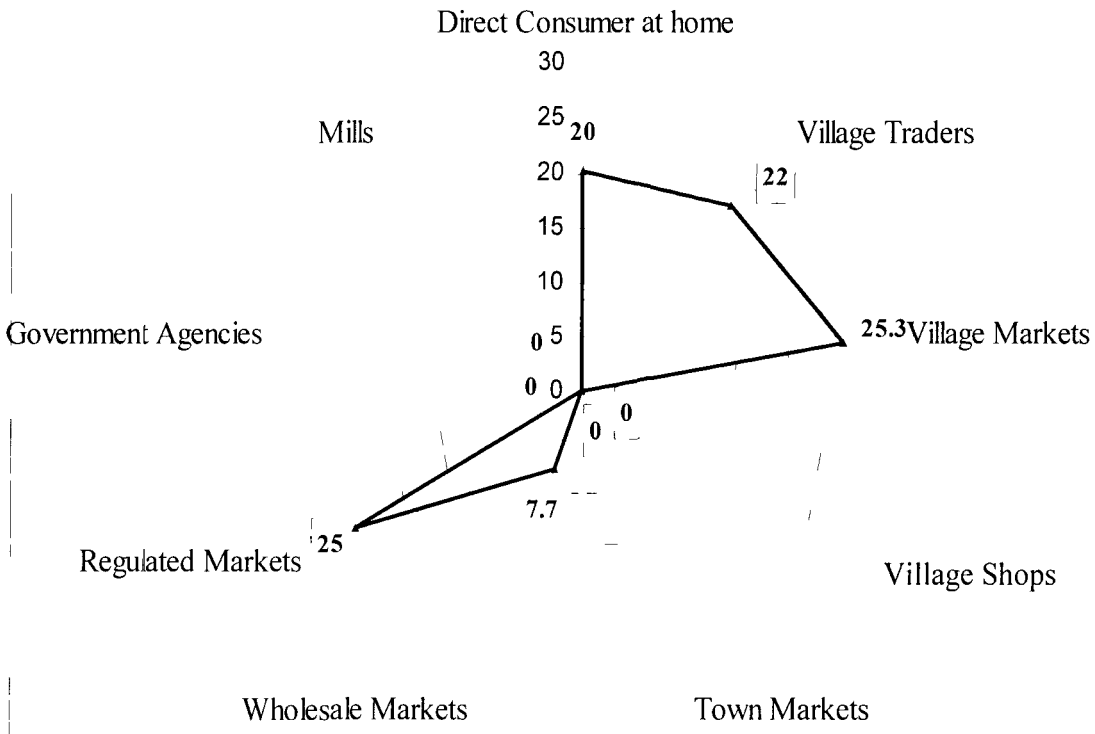


***Thick line represents percentage of marketed surplus at different stages in the district**

Fig -4.6

PROPORTION OF ONION MARKETED AT DIFFERENT STAGES IN ARARIA DISTRICT

2002-2003



*Thick line represents percentage of marketed surplus at different stages in the district

Fig -4.7

4.3 Methods of Transaction of Agricultural Products

The nature of transaction methods of agricultural products in the study area through different marketing agencies is found to vary according to quantity and quality of products under sale process. Thus accordingly, these transaction methods can be grouped into various categories as discussed below:

(a) Undercover Method

(b) Open Auction Method

(c) By Quotation on Samples

(d) Private Negotiation

(e) Close Tender System

(f) Government Purchase

(a) Undercover Method

This is very primitive method, which is rarely in operation in periodic markets. In this method *Arhatiya* forms group of buyers and sellers. He clasps their hands under a cover cloth, usually small towel or *dhoti* and presses the fingers on sellers palm to indicate the rate at which the buyer is ready to purchase. The under cover method is practiced only in wholesale periodic markets at Araria Court, Jokihat, Chanderdai and Doriasonapur.

(b) Open Auction Method

This is also a wholesale trading process in which the buyer declares his bids aloud to auctioneer who may be an *Arhatiya*, broker or seller himself. The goods are usually sold to highest bidder. However, in some markets, double

auction system prevails. At first, the market official auctions each heap of commodities to *dalal*/broker. In the second auction the *dalal*/broker or wholesale trader, auctions his own purchases (from the first auction) to other buyers. This system is found in both the regulated markets of Araria and Forbesganj of the district. This system of sale is preferred over all other systems because of the fact it ensures fair dealing to all parties.

(c) By Quotation on Samples

Under this system, the commodity is not heaped up but is kept in bags on cart etc and the *Arhatiya* collects samples from the sellers samples and takes them round and offers are made on the basis of these samples. This kind of method is found in big rural markets where bigger wholesale transactions take place. They are Araria Court, Jokihat, Chanderdai, and Doriasonapur.

(d) Private Negotiation

Under this system the seller may invite offers for his produce and sell to one who might have offered the highest price for the produce. It is most common in unregulated market.

(e) Close Tender System

This is similar to auction but the rates are not open and bids are invited in the form of a close tender and the product is given to the highest bidder.

(f) Government Purchase

The government agencies make purchase with a view to ensure fair price for producers' surplus, as an incentive to

increase the production, supply of essential commodities to the consumer at reasonable price, to minimize seasonal fluctuation and to undertake procurement for maintenance of buffer stock. The main public trading agencies are Food Corporation of India (FCI), State Food Corporation of India (SFC), Bihar State Cooperative Marketing Union (BISCOMAUN). All these trading agencies undertake the purchase of different commodities under the scheme of procurement and minimum support price declared by government.

4.4 Market Functionaries

The study of market functionaries involved in trading of agricultural commodities is an important aspect of agricultural marketing system in India. The system of agricultural marketing is saddled with a long chain of intermediaries who in turn, reduce the effective share of producers to the consumers' price, to a considerable extent[1]. The number of middlemen or functionaries and their operations vary with the nature of commodities dealt with. The important functionaries involved in agricultural marketing system are.

(a) Village Beoparies
(b) Itinerant Traders
(c) Arhatiyas
(d) Brokers (Dalals)
(e) Auctioneers
(f) Wholesalers
(g) Retailers
(h) Processing agents

---

[1] Khan, N. (1991), *Agricultural Development and Marketing*, H.K, Publisher, p-210.

(i) Weighmen

(j) Palledars

(k) Others

(a) Village Traders/Beoparies

Village *beopari* is the most usual purchaser of agricultural produce. He usually collects the produce from the villages/ *haats* and brings it to the secondary markets and from there it reaches consumers. The village *beopari* is sometimes also a producer and he buys locally for a sale to secondary markets. Thus storing and primary assembling are his main functions. Often he advances money to the producers. thus acting as a financier too. In almost all of the sampled villages, village traders had given advanced money at the time of sowing to the producers and in return producers sold their product to the village traders.

(b) Itinerant Traders

Itinerant dealer wanders village to village, purchases and collects the agricultural produce and takes, it to the nearest market. He purchases the produce at cheaper rate from the farmers owing to the lack of competition from other *beoparis*. Sometimes he also finances the cultivators at the time of sowing and in lieu of that he purchases the produce from them at cheaper rates.

(c) Arhatiyas

They are also known as commission agents. The *arhatiyas* are of two types, viz: (i) *Katcha arhatiyas* and (ii) *Pucca*

arhatiyas. The *Katcha arhatiyas* are men of small capital, who sell the produce in assembling market on behalf of those farmers of village from whom they collect the produce. The *Pucca arhatiyas* own big capital and buy and sell the produce on behalf of the merchants from outside markets. *Arhatiyas* often perform the function of wholesale merchants also. Thus, the *Katcha arhatiya* is concerned with the assembling of produce while the *Pucca arhatiya* distributes it. They also advance loans to the village *beoparies* and itinerant dealers on the conditions that the produce will be sold to them or through them.

(d) Brokers or Dalals

Generally speaking, the *dalal* assists the *arhatiya* in bringing together sellers and buyers and arranging the sale of produce. The charge paid to *dalals* in lieu of their services is known as brokerage or *dalali*.

(e) Auctioneers

The auctioneers play important role in the marketing of fruits, vegetables and other perishable agricultural commodities. The auctioneer brings the produce before the purchasers and auctions it to the highest bidder often charging commission for his service.

(f) Wholesalers

Wholesalers are those traders who sell and purchase the agricultural produce in very large quantities .The wholesalers are assisted by village traders and *arhatiyas* in their trade. They generally perform the functions of

assembling, storing, grading, risk bearing and marketing finance.

(g) Retailers

Retailers purchase the agricultural produce from wholesalers at a wholesale price and sell it to final consumers. The profit earned by the retailers in buying and selling the produce is known as retailer's margin. The growers sometimes also work as retailers in rural periodic markets, dealing with the consumers directly.

(h) Processing Agents

Processors are that group of traders who purchase the agricultural produces directly from the farmers and some other intermediaries to add valuability to the products before they go to the consumers. These traders may be small scale processors in rural areas itself, big farmers or the owners of big mills.

(i) Weighmen (Taulas)

Taula not only weighs the produces but sometimes collects their samples from villages and takes them to the dealers in towns. He gets his commission as well as *taulai* (charge for weighing the products).

(j) Palledars

Palledars are the market labourers who attend the collection and handling of produce in the markets. They are usually independent workers, though in certain cases they are permanent employees of commission agents. The charge paid to the *palledars* is known as *palledari*. Their charges are deduced from the producer sellers.

(k) Others

There are number of other minor functionaries such as sweeper, water carriers and other servants of *arhatiya* who attend the affairs of *arhatiya* client.

4.5 Marketing Channels of the Agricultural Products

Generally, agricultural commodities namely, paddy, rice, wheat, maize, pulses, potato, onion etc undergo a change of ownership through time and space. The intermediaries are involved in passing of the commodities from producer to ultimate consumer through different market channels of the commodities. In Araria district following marketing channels have been identified for rice, wheat, maize, pulses, potato and onion. They are given below.

4.5.1 Marketing Channels For Paddy/Rice

(1) Producer⟶Consumer (Direct Sale).

(2) Producer ⟶Village Trader ⟶ Wholesale Trader ⟶Mills ⟶Government Agencies ⟶Fair Price Shop⟶ Consumer.

(3) Producer⟶Itinerant Trader⟶Primary Wholesaler⟶-Miller ⟶Secondary Wholesaler ⟶Retailer ⟶Consumer.

(4) Producer ⟶Miller ⟶ Wholesaler ⟶Retailer ⟶Consumer.

(5) Producer ⟶Miller ⟶Consumer.

(6) Producer ⟶Commission Agent ⟶Miller ⟶Wholesaler ⟶Retailer⟶ Consumer.

(7) Producer ⟶Government Agencies ⟶Miller ⟶Fair Price Shop ⟶Consumer.

(8) Producer ⟶Cooperative Marketing Societies ⟶ Cooperative Processing Unit⟶ Wholesaler ⟶Retailer ⟶Consumer.

MARKETING CHANNELS FOR PADDY/RICE

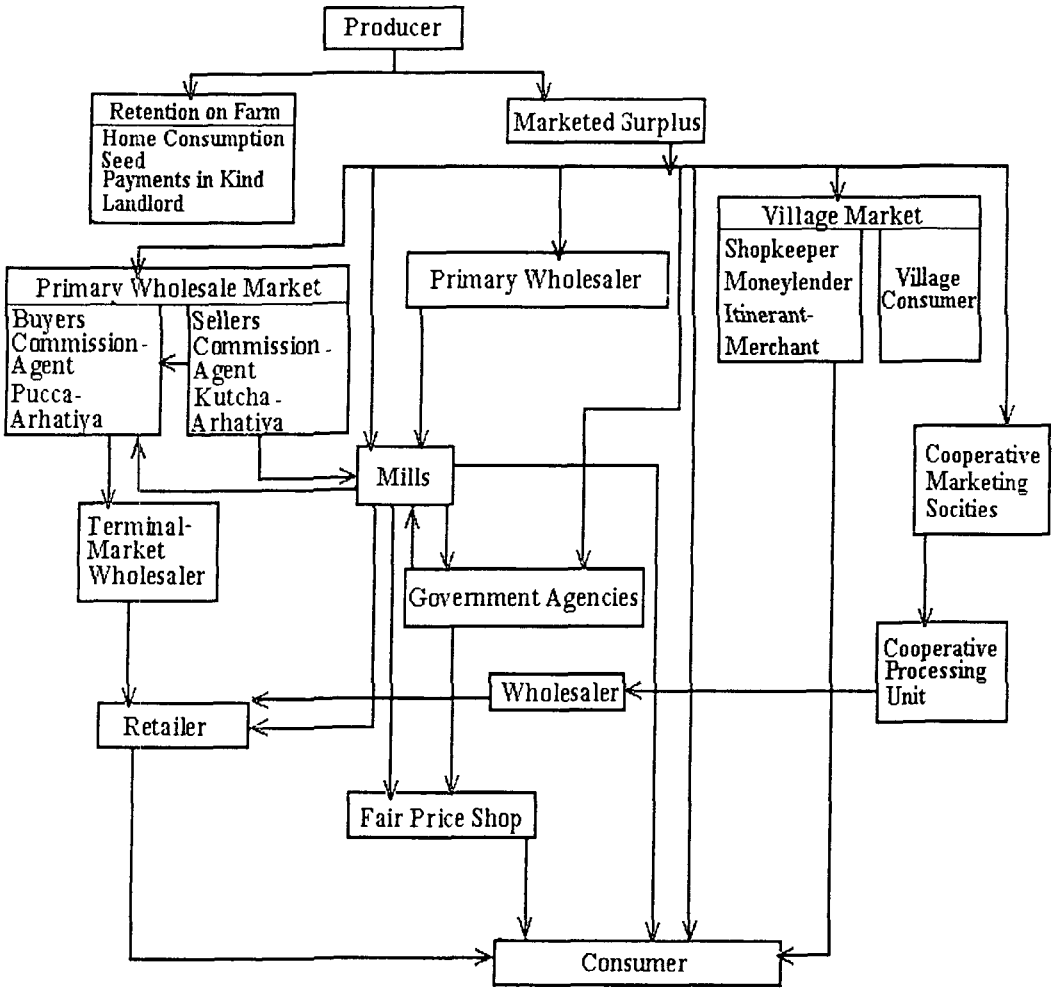


Fig-4.8

4.5.2 Marketing Channels for Wheat

(1) Producer⟶Consumer (Direct Sale).

(2) Producer⟶Village Shopkeeper⟶Village Trader⟶ Wholesaler-Retailer ⟶ Consumer.

(3) Producer⟶Itinerant Trader⟶Wholesaler⟶Retailer ⟶Consumer.

(4) Producer⟶PrimaryWholesaler⟶SecondaryWholesaler⟶Retai ler⟶Consumer.

(5) Producer→Primary Wholesaler →Miller →Wholesaler →Retailer →Consumer.

(6) Producer→Primary Wholesaler →Government Agencies →Roller Flour Mill →Fair Price Shop →Consumer.

(7) Producer→Government Agencies →Fair Price Shop→Consumer.

(8) Producer→Government Agencies→Roller Flour Mill →Wholesaler →Retailer →Consumer.

(9) Producer →Periodic Market →Consumer.

(10) Producer →Periodic Markets →Itinerant Trader→Consumer.

MARKETING CHANNELS FOR WHEAT

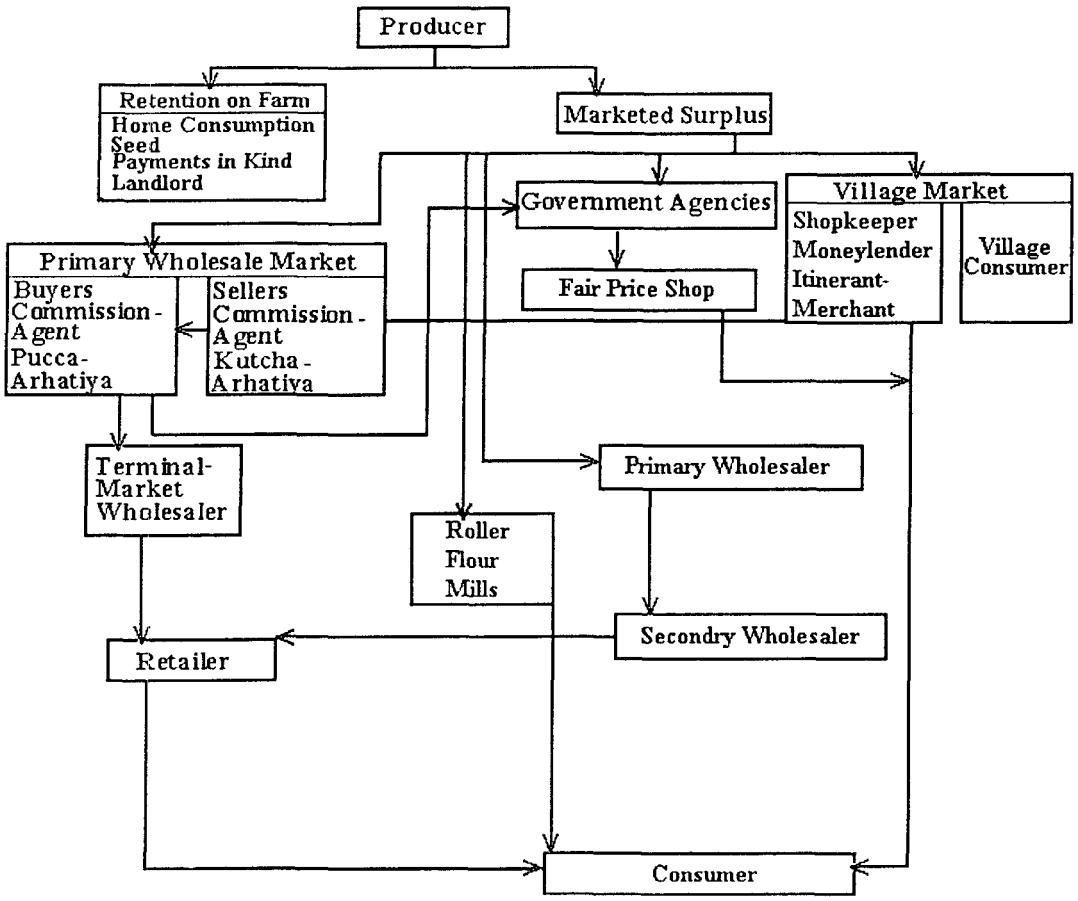


Fig-4.9

4.5.3 Marketing Channels for Maize

(1) Producer⟶Consumer (Direct).

(2) Producer⟶Primary Market (Rural) ⟶Secondary Market⟶ Wholesaler Commission Agent ⟶Wholesaler-Retailer⟶ Consumer.

(3) Producer⟶Primary Market ⟶Secondary Market⟶ Wholesaler Commission Agent ⟶Retailer ⟶Consumer.

(4) Producer⟶ Itinerant Merchant ⟶Village Shop ⟶Rural Consumer.

MARKETING CHANNELS FOR MAIZE

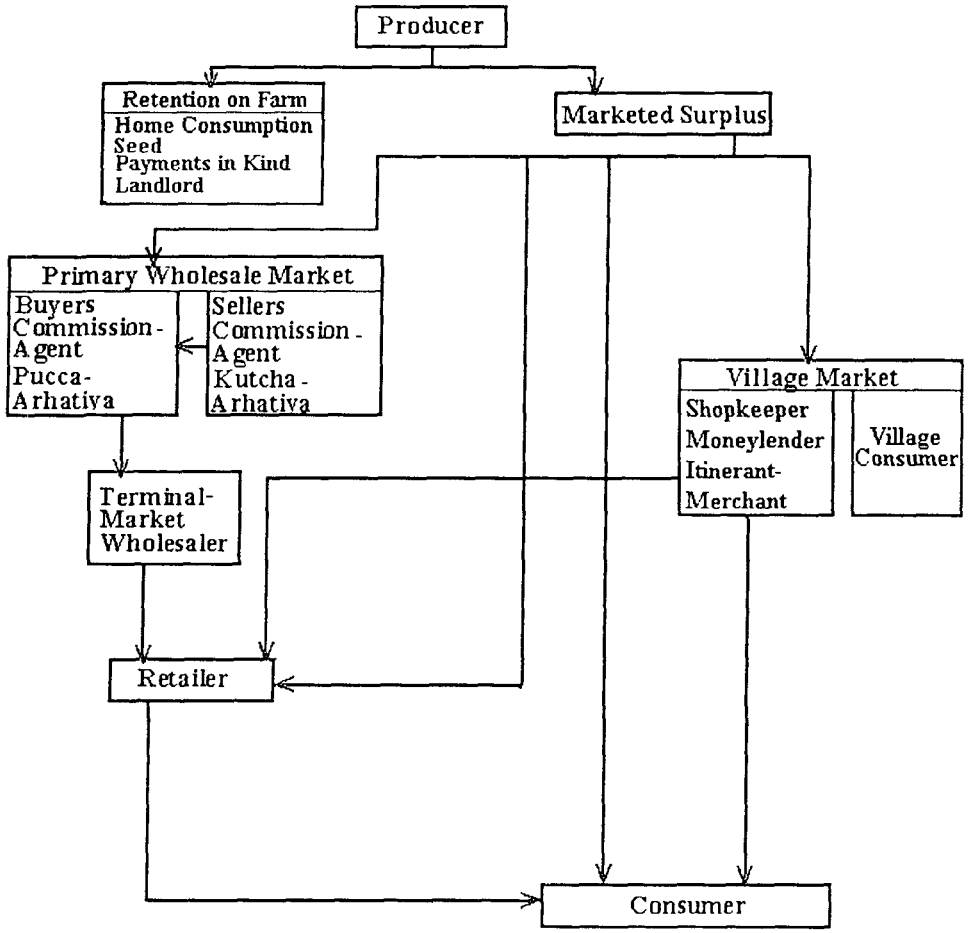


Fig-4.10

4.5.4 Marketing Channels for Pulses

(1) Producer⟶Consumer (Direct).

(2) Producer ⟶Village Shopkeeper ⟶Village Trader Wholesaler ⟶Retailer ⟶Consumer.

(3) Producer⟶ Itinerant Trader Wholesaler ⟶Retailer⟶ Consumer.

(4) Producer⟶Primary Wholesaler ⟶Secondary Wholesaler⟶ Retailer ⟶Consumer.

(5) Producer⟶Primary Wholesaler ⟶Consumer.

(6) Producer⟶ Periodic Market ⟶Consumer.

Producer⟶ Periodic Market ⟶Itinerant Trader⟶ Consumer.

MARKETING CHANNELS FOR PULSES

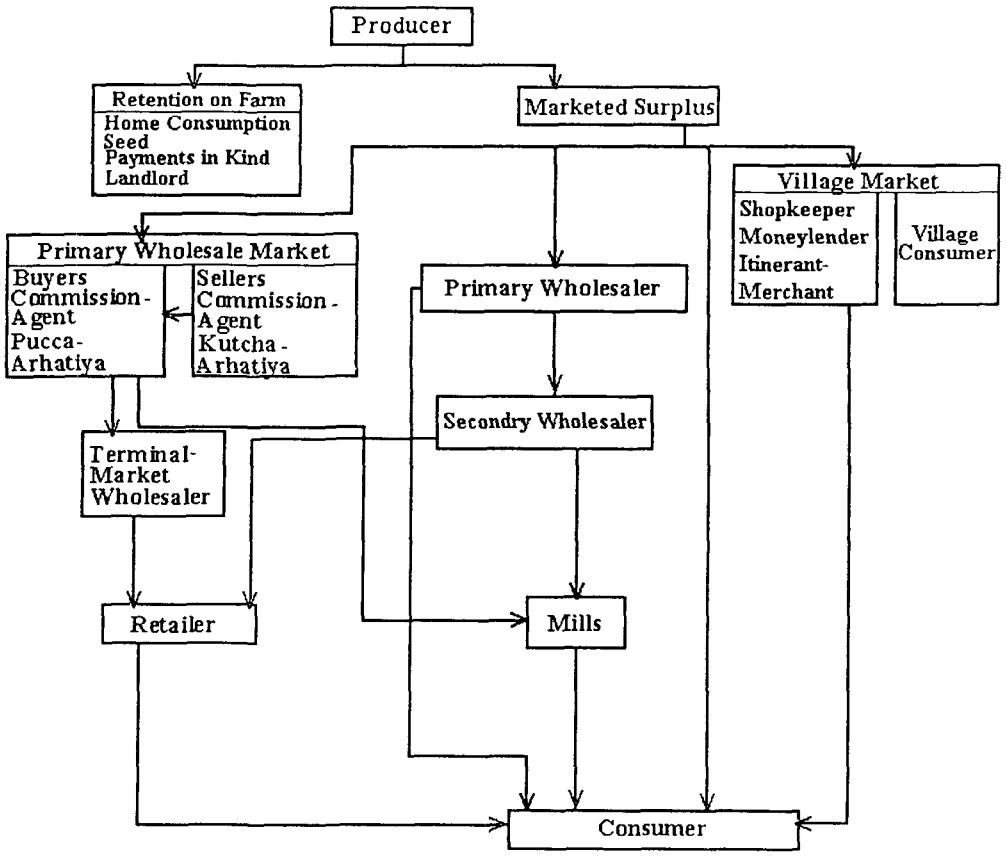


Fig-4.11

4.5.5 Marketing Channels for Potato/Onion

(1) Producer⟶Consumer.

(2) Producer ⟶Village Trader⟶Consumer.

(3) Producer ⟶Periodic Market ⟶Buying Trader ⟶Urban Consumer.

(4) Producer ⟶Town Market ⟶Consumer.

(5) Producer ⟶Cold Storage ⟶Wholesaler ⟶Retailer ⟶ Consumer.

(6) Producer ⟶Cold Storage ⟶Wholesaler ⟶ Retailer ⟶ Consumer.

MARKETING CHANNELS FOR POTATO/ONION

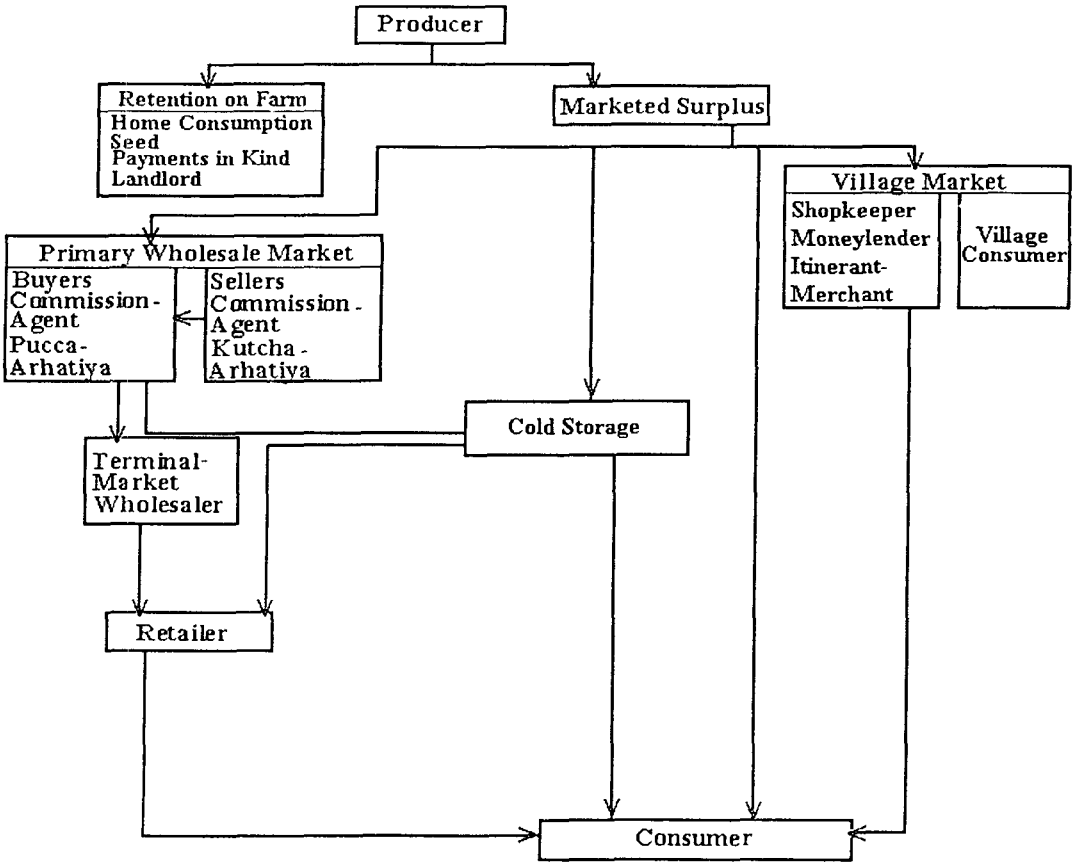


Fig-4.12

References

(1) Amani,K.Z & Khan, N. (1989), Agricultural Marketing in Uttar Pradesh, *The Geographer*, Vol XXXVI, No.2, pp-7-17.

(2) Amani,K.Z.and Khan,N. (1993), Spatial Behaviour of Consumers and Traders in Periodic Markets in a North Indian State : A Case Study, *Asian Profile*, Vol, 21. No,3, p-245.

(3) Khan, N. (1988), Direct Marketing in Agriculture in Faizabad District, *The Geographer*, Vol.XXXV, No.2, pp.68-79.

(4) Khan, N. (1991), *Agricultural Development and Marketing*, H.K, Publisher and Distributors. 210.

(5) Khan, N. (1999), Role of periodic Markets in Agricultural Marketing System, in *Commercial Activities and Development in Ganga Basin* (ed) V.K Srivastva, Concept Publication Company, New Delhi, p 341.

(6) Khols, R.L .(1967), *Marketing of Agricultural Products*, 3rd Ed, Machmillan, London, P.9.

(7) Saxena, P. (2003), *Marketing and Sustainable Development*, Rawat Publication, Jaipur , P.101.

CHAPTER-5

SPATIO-TEMPORAL PATTERNS OF MARKETED SURPLUS

5.1 Introduction

The quantity of marketable surplus of agricultural products plays a significant role in their transaction of agro-commodities in market centers. Marketable surplus represents the surplus of agricultural products available with the farmers for disposal, left after meeting his requirements of family consumption, payment of wages in kind, seed and wastage etc. In general marketable surplus of agricultural products refers to the amount which a farmer can sell in the market. It consists of the entire output in the case of cash crops (commercial crops) but only that part of foodgrains which is above the subsistence needs of the family.

Marketed surplus, on the other hand, represents only that portion of the marketable surplus which is actually put in the market for sale or it is placed at disposal of non-farming rural as well as urban population[1]. Thus in a way, marketed surplus is part of marketable surplus. In this chapter, the concern has been basically with the marketed surplus. The study of marketed surplus has been organized under the following sections:

Section I It is devoted to the study of spatial patterns of marketed surplus on the basis of the arrival size of six major commodities i.e. rice, wheat, maize, pulses, potato and onion. They have been selected and spatial patterns of their marketed surplus are discussed from the sampled regulated and periodic market centers of the district. (Fig- 5.1)

Section II Temporal patterns of marketed surplus are analyzed on the basis of data collected from the different sampled regulated and primary markets i.e. periodic markets, through

---

[1] Prasad, J. (1989), *Marketable Surplus and Market Performance*, Mittal Publication Delhi, p-44.

field survey, records of the concerned markets and other government agencies. Seasonal arrival pattern is also discussed on the basis of twelve market days of twelve months of the year. In this section twelve months' arrivals of major crops has been grouped into three main periods, (i) post-harvest period (ii) intermediate period (iii) pre-harvest /lean period.

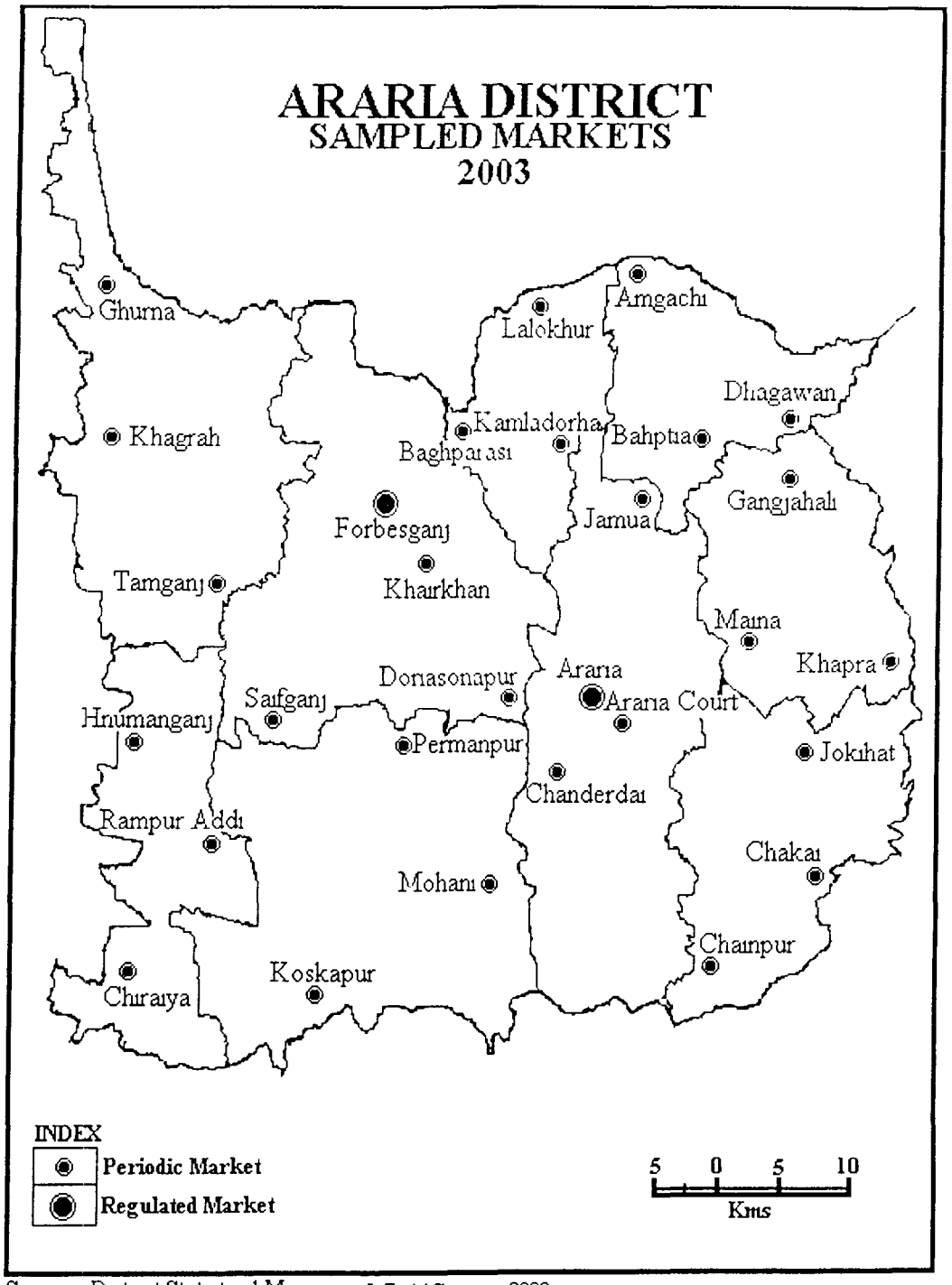
Section III It deals with village level marketed surplus to the different marketing agencies. It also takes into consideration the size of land holding as a factor determining the marketing of different agricultural commodities.

5.2 Spatial Patterns of Marketed Surplus of Agricultural Commodities

Data have been collected and processed to get the value of the average marketed surplus of selected agro-commodities in different sampled markets i.e. regulated and periodic market on the basis of twelve market days of twelve months of the year. It revealed that 473389 quintals of selected agricultural commodities (rice, wheat, maize, pulses, potato and onion) were marketed during the 2002-2003. Among these selected crops, rice has accounted for highest share of 46.63 per cent (220720 quintals) of marketed surplus in the sampled markets. It is followed by wheat with 26.45 per cent (125209 quintals), potato with 10.38 per cent (49144 quintals), onion with 9.91 per cent (46920 quintals), maize and pulses constituting 3.32 per cent (15697.5 quintals), and 3.33 per cent (15698.2 quintals) of marketed surplus in sampled market centers of the district. The variation in marketed surplus of different commodities is mainly due to the variation in the production of crops in the study region[1] (Table 5.1).

---

[1] Saxena, P. (2003), *Marketing and Sustainable Development*, Rawat Publication Jaipur, p-118



Source District Statistical Magazine & Field Survey -2003

Fig - 5.1

Table-5. 1
Spatial Patterns of Marketed Surplus of Agricultural Commodities in the Sampled Market Centers of Araria District (2002-2003)

SN	Sampled Markets	Foodgrains			Pulses	Vegetables	
		Rice	Wheat	Maize		Potato	Onion
Regulated Markets							
1	Araria	67595	26676	4278	3527	12789	10721
2	Forbesganj	72341	32539	7382	4120	16321	12654
Periodic Markets							
1	Araria Court	18870	14535	1020	765	4080	3060
2	Chanderdai	5610	4080	255	408	1275	1224
3	Jamua	2040	1683	204	357	1530	1326
4	Jokihat	14790	10710	459	612	2091	2295
5	Chakai	2550	2193	265.2	408	1275	1309
6	Chainpur	1020	765	168.3	306	816	867
7	Amgachi	1785	1581	122.4	255	612	714
8	Bahptia	1632	1326	107.1	204	561	765
9	Dhagawan	1377	1122	137.7	306	714	612
10	Gangjahali	1581	1326	96.9	255	510	663
11	Khapra	2040	1581	102	255	510	714
12	Maina	1326	1020	112.2	260.1	561	765
13	Rampur Addi	1224	1377	0	244.8	408	612
14	Hanumanganj	1275	1479	0	255	357	561
15	Chiraiya	1428	1530	0	229.5	408	663
16	Parmanpur	3315	2856	91.8	219.3	459	714
17	Mohani	1326	1020	96.9	255	459	714
18	Koskapur	1785	1632	0	255	408	714
19	Ghurna	1632	1683	0	204	255	663
20	Khagrah	1377	1377	0	187	178.5	357
21	Tamganj	1479	1173	0	127.5	102	408
22	Doriasonapur	4080	3621	153	408	510	612
23	Saifganj	918	1275	0	255	510	663
24	Khairkhan	1530	1224	238	306	408	663
25	Kamladorha	1632	1326	153	255	357	714
26	Lalokhur	1530	1224	102	255	357	612
27	Baghparasi	1632	1275	153	204	323	561
	Total	**220720**	**125209**	**15697**	**15698**	**49144**	**46920**

Source: Field Survey 2002-2003 *(Weight in Quintal)*

5.2.1 Marketed Surplus of the Agricultural Commodities in the Sampled Markets of Araria District

Market-wise analysis done for the selected crops reveals a great variation in its magnitude in regulated and urban periodic markets. And it is found that the markets which are located at the district/block

headquarters and other administrative centers attracted big marketed surplus[1]. Araria and Forbesganj regulated *mandi* of the district received/transacted more than 50 per cent of the total marketed surplus of agro-commodities in the sampled markets of the district. The sampled periodic markets also have a lion share of marketed surplus of agricultural commodities in the district. For example Araria Court has a share of 8.94 per cent (42330 quintals), Jokihat 6.54 per cent (30957 quintals), Chanderdai 2.71 per cent (12853 quintals), Doriasonapur 1.98 per cent (9384 quintals), Chakai 1.69 per cent (8000.2 quintals), Permanpur 1.62 per cent (7655.1 quintals), Khapra 1.10 per cent (5202 quintals), and Amgachi 1.07 per cent (5069.4 quintals) total of marketed surplus of the agricultural commodities. The remaining market (periodic) centers have contributed less than one per cent of marketed surplus of different agricultural commodities in the selected market centers of Araria district (Tables-5.1 and 5.2).

5.2.2 Marketed Surplus of Rice in the Sampled Markets

The proportion of an individual crop in the district's total marketed surplus of that crop in different market centers also shows variation. As far as the rice is concerned, its marketed surplus varies from market to market. The selected regulated markets have received 60 per cent of the total marketed surplus of rice in the district. Forbesganj regulated market has the highest share of marketed surplus of rice constituting 32.78 per cent (72341 quintals) and Araria regulated market has 30.62 per cent (67595 quintals) of total quantity of marketed surplus of rice in the district. So far marketed surplus of rice in the periodic markets is concerned; there is a great regional variation in its marketed surplus. Araria Court urban periodic market has the highest share in the

---

[1] Ibrahim, R. (1984), *Market Centers and Regional Development*, B.R Publishing Corporation, pp. 81-82.

marketed surplus of rice amounting 8.55 per cent (18870 quintals), followed by Jokihat 6.70 per cent (14790 quintals), Doriasonapur 1.85 per cent (4080 quintals), Permanpur 1.50 per cent (3315 quintals) and Chakai 1.16 per cent (2550 quintals). Whereas remaining sampled periodic markets have dealt with less than one per cent of the total marketed surplus of rice during 2002-2003 (Tables- 5.1 and 5.2).

5.2.3 Marketed Surplus of Wheat in the Sampled Markets

Like rice, wheat also has great spatial variation in the marketed surplus in different markets. Araria and Forbesganj share 21.31 per cent (26676 quintals) and 25.99 per cent (32539 quintals) of the total marketed surplus of wheat in the sampled markets of the study area respectively. Among the sampled periodic markets, Araria Court constitutes highest share of 11.61 per cent (14535 quintals) of marketed surplus of wheat, followed by Jokihat 8.55 per cent (10710 quintals), Chanderdai 3.26 per cent (4080 quintals), Doriasonapur 2.89 per cent (3621 quintals), Permanpur 2.28 per cent (2856 quintals). The remaining periodic markets constitute less than 2 per cent of the total marketed surplus of wheat in the district (Tables- 5.1 and 5.2).

5.2.4 Marketed Surplus of Maize in the Sampled Markets

Among the foodgrains maize constitutes 3.32 per cent (15697.5 quintals) of the total marketed surplus of agricultural commodities in the sampled market centers of the district. Two regulated markets, Araria and Forbesganj constitutes about 70 per cent of marketed surplus of maize among the sampled district markets. While among the periodic markets Araria Court contributes 6.50 per cent (1020 quintals), Jokihat 2.92 per cent (459 quintals) and remaining markets contribute less than 2 per cent of marketed surplus (Tables- 5.1 and 5.2).

Table-5.2
Proportion of Individual Crop of in the District's Marketed Surplus in the Sampled Market Centers of Araria District (2002-2003)

SN	Sampled Markets	Food grains			Pulses	Vegetables		District Average
		Rice	Wheat	Maize		Potato	Onion	
Regulated Markets								
1	Araria	30.62	21.31	27.25	22.47	26.02	22.85	26.53
2	Forbesganj	32.78	25.99	47.03	26.25	33.21	26.97	30.71
Periodic Markets								
1	Araria Court	8.55	11.61	6.50	4.87	8.30	6.52	8.94
2	Chanderdai	2.54	3.26	1.62	2.60	2.59	2.61	2.71
3	Jamua	0.92	1.34	1.30	2.27	3.11	2.83	1.51
4	Jokihat	6.70	8.55	2.92	3.90	4.25	4.89	6.54
5	Chakai	1.16	1.75	1.69	2.60	2.59	2.79	1.69
6	Chainpur	0.46	0.61	1.07	1.95	1.66	1.85	0.83
7	Amgachi	0.81	1.26	0.78	1.62	1.25	1.52	1.07
8	Bahptia	0.74	1.06	0.68	1.30	1.14	1.63	0.97
9	Dhagawan	0.62	0.90	0.88	1.95	1.45	1.30	0.90
10	Gangjahali	0.72	1.06	0.62	1.62	1.04	1.41	0.94
11	Khapra	0.92	1.26	0.65	1.62	1.04	1.52	1.10
12	Maina	0.60	0.81	0.71	1.66	1.14	1.63	0.85
13	Rampur Addi	0.55	1.10	0.00	1.56	0.83	1.30	0.82
14	Hanumanganj	0.58	1.18	0.00	1.62	0.73	1.20	0.83
15	Chiraiya	0.65	1.22	0.00	1.46	0.83	1.41	0.90
16	Parmanpur	1.50	2.28	0.58	1.40	0.93	1.52	1.62
17	Mohani	0.60	0.81	0.62	1.62	0.93	1.52	0.82
18	Koskapur	0.81	1.30	0.00	1.62	0.83	1.52	1.01
19	Ghurna	0.74	1.34	0.00	1.30	0.52	1.41	0.94
20	Khagrah	0.62	1.10	0.00	1.19	0.36	0.76	0.73
21	Tamganj	0.67	0.94	0.00	0.81	0.21	0.87	0.69
22	Doriasonapur	1.85	2.89	0.97	2.60	1.04	1.30	1.98
23	Saifganj	0.42	1.02	0.00	1.62	1.04	1.41	0.76
24	Khairkhan	0.69	0.98	1.52	1.95	0.83	1.41	0.92
25	Kamladorha	0.74	1.06	0.97	1.62	0.73	1.52	0.94
26	Lalokhur	0.69	0.98	0.65	1.62	0.73	1.30	0.86
27	Baghparasi	0.74	1.02	0.97	1.30	0.66	1.20	0.88

Source: Field Survey 2002-2003 *(Unit in Per cent)*

5.2.5 Marketed Surplus of Pulses in the Sampled Markets

Among the pulses *gram, masoor* and *khesari* are grown abundantly in different parts of the district. There is great regional variation in the marketed surplus of pulses. Araria and Forbesganj regulated markets contribute 22.47 per cent (3527 quintals) and 26.25

per cent (4120 quintals) of the total marketed surplus of pulses respectively.

Table- 5.3
Proportion of Marketed Surplus of Different Crops at the Individual Market (2002-2003)

S N	Sampled Markets	Food grains			Pulses	Vegetables	
		Rice	Wheat	Maize		Potato	Onion
Regulated Markets							
1	Araria	53.82	21.24	3.41	2.81	10.18	8.54
2	Forbesganj	49.77	22.39	5.08	2.83	11.23	8.71
Periodic Markets							
1	Araria Court	44.58	34.34	2.41	1.81	9.64	7.23
2	Chanderdai	43.65	31.75	1.75	3.17	9.92	9.52
3	Jamua	28.57	23.57	2.86	5.00	21.43	18.57
4	Jokihat	47.78	34.60	1.48	1.98	6.75	7.41
5	Chakai	31.87	27.41	3.31	5.10	15.94	16.36
6	Chainpur	25.87	19.41	4.27	7.76	20.70	21.99
7	Amgachi	35.21	31.19	2.41	5.03	12.07	14.08
8	Bahptia	32.26	26.28	3.23	7.17	16.73	14.34
9	Dhagawan	35.67	29.92	2.19	5.75	11.51	14.96
10	Gangjahali	34.79	29.18	2.36	4.49	12.35	16.84
11	Khapra	39.22	30.39	1.96	4.90	9.80	13.73
12	Maina	32.79	25.22	2.77	6.43	13.87	18.92
13	Rampur Addi	31.66	35.62	0.00	6.33	10.55	15.83
14	Hanumanganj	32.47	37.66	0.00	6.49	9.09	14.29
15	Chiraiya	33.53	35.93	0.00	5.39	9.58	15.57
16	Parmanpur	43.30	37.31	1.20	2.86	6.00	9.33
17	Mohani	34.26	26.35	2.50	6.59	11.86	18.45
18	Koskapur	37.23	34.04	0.00	5.32	8.51	14.89
19	Ghurna	36.78	37.93	0.00	4.60	5.75	14.94
20	Khagrah	39.61	39.61	0.00	5.38	5.13	10.27
21	Tamganj	44.96	35.66	0.00	3.88	3.10	12.40
22	Doriasonapur	43.48	38.59	1.63	4.35	5.43	6.52
23	Saifganj	25.35	35.21	0.00	7.04	14.08	18.31
24	Khairkhan	35.02	28.02	5.45	7.00	9.34	15.18
25	Kamladorha	36.78	29.89	3.45	5.75	8.05	16.09
26	Lalokhur	37.50	30.00	2.50	6.25	8.75	15.00
27	Baghparasi	40.51	31.65	3.80	5.06	5.06	13.92
	Average	**46.63**	**26.45**	**3.32**	**3.32**	**10.38**	**9.91**

Source: Field Survey 2002-2003 *(Unit in Per cent)*

Among the periodic markets, Araria Court shares 4.87 per cent (765 quintals), Jokihat 3.90 per cent (612 quintals), Doriasonapur and Chakai 2.60 per cent (408 quintals) each, while Jamua's share is 2.27

per cent (357quintals) of total marketed surplus of pulses in the different sampled markets of the district. The remaining periodic market centers contribute less than 2 per cent marketed surplus of pulses in the sampled periodic market centers (Tables- 5.1 and 5.2).

5.2.6 Marketed Surplus of Potato and Onion in the Sampled Markets

The share of vegetables, i.e. potato and onion in the marketed surplus of agro-commodities also varies among the sampled markets. Forbesganj and Araria constitute 33.21 per cent (16321 quintals), 26.97 per cent (12654 quintals) and 26.02 per cent (12789 quintals), 22.85 per cent (10721 quintals) of marketed surplus of potato and onion in sampled regulated markets of the district. While among the periodic markets, Araria Court constitutes largest share of 8.30 per cent (4080 quintals) and 6.52 per cent (3060 quintals) respectively of potato and onion marketed surplus (Tables- 5.1 and 5.2). The remaining markets contribute below 5 per cent of marketed surplus in all sampled markets of the district during 2002-2003.

Spatial pattern of marketed surplus of selected crops in sampled markets show that rice accounts for highest share of 46.63 per cent of total marketed surplus of various agricultural products. It is followed by wheat with 26.45 per cent, potato 10.38 per cent, onion 9.91 per cent, maize and pulses 3.32 per cent and 3.33 per cent respectively. The variation in marketed surplus of different crops in the district is due to variation in demand and supply of these commodities in the region (Table-5.3).

Similarly, the different types of marketing agencies dealing with agricultural commodities also show variation in their marketed surplus. Regulated and urban periodic markets have highest proportion of marketed surplus in the area. Analysis shows that, the market centers

which are well connected with roads and railways have a higher proportion of marketed surplus. Moreover, spatially the market centers which are located in the eastern and northern parts of Araria district have higher marketed surplus of the agricultural commodities than that of the market centers located in the western side of the district. It is because of well connectivity of eastern and northern parts as well as higher productivity in these regions. On the other hand lower marketed surplus in the western part of the district is due to lower productivity of crops caused by flood from *Kosi* river as well as lesser spatial connectivity among the markets. This supports the hypothesis that better spatial integration of market centers at different levels of marketing channels due to efficient transportation and other infrastructural facilities reduces spatial unevenness of marketed surplus.

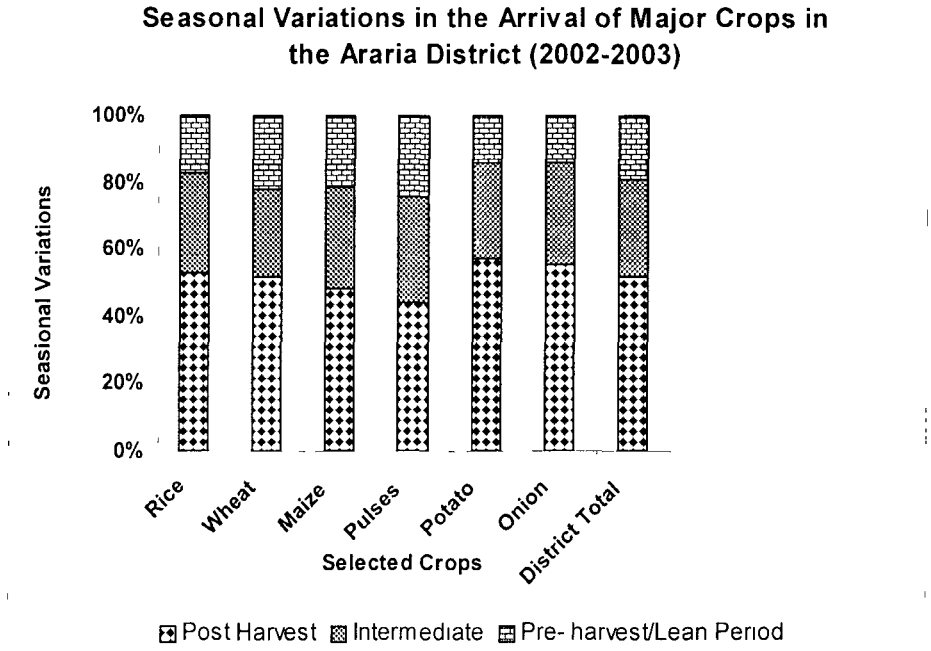
5.3 Seasonal Arrival Patterns of Agricultural Commodities

The market arrival of an agricultural commodity is that quantity which is brought in the market by the producer-sellers, itinerant dealers, village merchant, *katcha arhatiyas*, etc., for sale purpose. In this section attempt has been made to examine the market arrivals of selected agricultural commodities in Araria district. (Table-5.4)

Table-5.4
Seasonal Variations in Arrival of Major Crops in the Araria District (2002-2003)

SN	Commodities	Post- Harvest Period	Intermediate Period	Lean Period Period
1	Rice	52.74	29.74	17.52
2	Wheat	51.88	26.37	21.75
3	Maize	48.27	30.12	21.61
4	Pulses	43.97	31.69	24.33
5	Potato	57.42	28.46	14.11
6	Onion	55.47	30.02	14.51
Average		**51.62**	**29.40**	**18.98**

Sources: Field Survey 2002-2003 *(Unit in Per cent)*



Source: Field Survey 2002-2003 **Fig-5.2**

5.3.1 Seasonal Arrival Pattern of Rice

There are well marked seasonal trends in the arrivals of various agricultural products brought in to the different regulated and periodic market centers. The arrival of agricultural products at different markets is not evenly distributed over all the year round. It is due to the fact that the production patterns of most commodities have a seasonal character[1]. However, according to the nature of market, whether regulated or periodic, market arrival varies spatially and temporally. Araria and Forbesganj regulated markets have received 46.80 per cent (31632 quintals) and 45.83 per cent (33152 quintals) of the total market arrival of rice in the first four busiest months i.e. post-harvest season as shown in Table-5.5. Out of 27 periodic market centers 25 periodic markets

---

1 Kahlon, A.S &George, M.V. (1985), *Agricultural Marketing and Price Policies*, Allied Publishers, Delhi, p-13.

have received more than 50 per cent of market arrival in the post-harvest period. It ranges between minimum 48 per cent in Hanumanganj to maximum 64.86 per cent in Araria Court periodic markets.

Table-5.5
Seasonal Arrival Pattern of Rice in the Sampled Markets of Araria District (2002-2003)

SN	Sampled Markets	Post-harvest Period	Intermediate Period	Lean Period
Regulated Markets				
1	Araria	31632 (46.80)	21750 (32.18)	14213 (21.03)
2	Forbesganj	33152 (45.83	22753 (31.45)	16436 (22.72)
Periodic Markets				
1	Araria Court	12240 (64.86)	4080 (21.62)	2550 (13.51)
2	Chanderdai	3060 (54.55)	1649 (29.39)	901 (16.06)
3	Jamua	1105 (54.17)	595 (29.17)	340 (16.67)
4	Jokihat	8160 (55.17)	3740 (25.29)	2890 (19.54)
5	Chakai	1360 (53.33)	765 (30.00)	425 (16.67)
6	Chainpur	595 (58.33)	255 (25.00)	170 (16.67)
7	Amgachi	1020 (57.14)	510 (28.57)	255 (14.29)
8	Bahptia	833 (51.04)	493 (30.21)	306 (18.75)
9	Dhagawan	731 (53.09)	391 (28.40)	255 (18.52)
10	Gangjahali	816 (51.61)	510 (32.26)	255 (16.13)
11	Khapra	1105 (54.17)	595 (29.17)	340 (16.67)
12	Maina	680 (51.28)	425 (32.05)	221 (16.67)
13	Rampur Addi	595 (48.61)	425 (34.72)	204 (16.67)
14	Hanumanganj	612 (48.00)	425 (33.33)	238 (18.67)
15	Chiraiya	765 (53.57)	425 (29.76)	238 (16.67)
16	Parmanpur	1870 (56.41)	850 (25.64)	595 (17.95)
17	Mohani	697 (52.56)	408 (30.77)	221 (16.67)
18	Koskapur	952 (53.33)	510 (28.57)	323 (18.10)
19	Ghurna	850 (52.08)	459 (28.13)	323 (19.79)
20	Khagrah	714 (51.85)	408 (29.63)	255 (18.52)
21	Tamganj	782 (52.87)	425 (28.74)	272 (18.39)
22	Doriasonapur	2210 (54.17)	1275 (31.25)	595 (14.58)
23	Saifganj	476 (51.85)	306 (33.33)	136 (14.81)
24	Khairkhan	782 (51.11)	459 (30.00)	289 (18.89)
25	Kamladorha	850 (52.08)	459 (28.13)	323 (19.79)
26	Lalokhur	833 (54.44)	425 (27.78)	272 (17.78)
27	Baghparasi	833 (51.04)	493 (30.21)	306 (18.75)
	Total	**110310 (52.74)**	**66263 (29.74)**	**44147 (17.52)**

Source: Field Survey 2000-2003 (Weight in Quintal and its percentage in bracket)

During intermediate period average market arrival of rice is found 29.74 per cent (66263 quintals) for the whole district. But it varies market-wise from minimum arrival of 25 per cent in Chainpur to maximum arrival of 33 per cent in Hanumanganj. Besides, lean period has received an average 17.52 per cent (44147 quintals) of marketed surplus of rice, with minimum 13.51 per cent in Araria Court periodic market to maximum 22.72 per cent in Forbesganj regulated market (Table - 5.5).

5.3.2 Seasonal Arrival Pattern of Wheat

The sampled markets have received maximum 51.88 per cent (63738 quintals) of market arrival of wheat in different sampled markets in the first four months of the year (April, May, June and July). Though the arrival of wheat varies from market to market during the same period. During post-harvest period, Araria Court periodic market centre has received maximum 56.73 per cent (8245 quintals) of wheat, while minimum arrival amounting 47.62 per cent (1360 quintals) of the total surplus of wheat is being received in Permanpur. Remaining market centers lie between them. Similarly, during intermediate period the sampled markets of the district have received 26.37 per cent (35600 quintals) of the total market arrival. In this period the arrival of wheat ranges between a maximum of 31.25 per cent (1275 quintals) in Chanderdai to minimum 24.41 per cent (884 quintals) in Doriasonapur. Moreover, during lean period district sampled markets received only 21.75 per cent (25871 quintals) of the total marketed surplus of wheat ranging between a maximum of 24.36 per cent (325 quintals) in Gangjahali to minimum 16.67 per cent (680 quintals) in Chanderdai (Table -5.6).

Table-5.6
Seasonal Arrival Pattern of Wheat in the Sampled Markets of Araria District (2002-2003)

SN	Sampled Markets	Post-harvest Period	Intermediate Period	Lean Period
Regulated Markets				
1	Araria	13221 (49.56)	7570 (28.38)	5885 (22.06)
2	Forbesganj	15752 (48.41)	9670 (29.72)	7117 (21.87)
Periodic Markets				
1	Araria Court	8245 (56.73)	4250 (29.24)	2040 (14.04)
2	Chanderdai	2125 (52.08)	1275 (31.25)	680 (16.67)
3	Jamua	935 (55.56)	425 (25.25)	323 (19.19)
4	Jokihat	5610 (52.38)	3060 (28.57)	2040 (19.05)
5	Chakai	1190 (54.26)	544 (24.81)	459 (20.93)
6	Chainpur	391 (51.11)	204 (26.67)	170 (22.22)
7	Amgachi	833 (52.69)	408 (25.81)	340 (21.51)
8	Bahptia	663 (50.00)	357 (26.92)	306 (23.08)
9	Dhagawan	561 (50.00)	306 (27.27)	255 (22.73)
10	Gangjahali	646 (48.72)	357 (26.92)	323 (24.36)
11	Khapra	799 (50.54)	425 (26.88)	357 (22.58)
12	Maina	527 (51.67)	272 (26.67)	221 (21.67)
13	Rampur Addi	714 (51.85)	357 (25.93)	306 (22.22)
14	Hanumanganj	765 (51.72)	391 (26.44)	323 (21.84)
15	Chiraiya	799 (52.22)	391 (25.56)	340 (22.22)
16	Parmanpur	1360 (47.62)	850 (29.76)	646 (22.62)
17	Mohani	510 (50.00)	272 (26.67)	238 (23.33)
18	Koskapur	833 (51.04)	442 (27.08)	357 (21.88)
19	Ghurna	867 (51.52)	459 (27.27)	357 (21.21)
20	Khagrah	714 (51.85)	340 (24.69)	323 (23.46)
21	Tamganj	595 (50.72)	323 (27.54)	255 (21.74)
22	Doriasonapur	1955 (53.99)	884 (24.41)	782 (21.6)
23	Saifganj	629 (49.33)	357 (28.00)	289 (22.67)
24	Khairkhan	612 (50.00)	357 (29.17)	255 (20.83)
25	Kamladorha	646 (48.72)	374 (28.21)	306 (23.08)
26	Lalokhur	612 (50.00)	340 (27.78)	272 (22.22)
27	Baghparasi	629 (49.33)	340 (26.67)	306 (24.00)
	Total	**63738 (51.88)**	**35600 (26.37)**	**25871 (21.75)**

Source: Field Survey 2002-2003 (Weight in Quintal and its percentage in bracket)

5.3.3 Seasonal Arrival Pattern of Maize

Nearly half of the total annual arrival of maize is received during the first four busiest months after the crop harvest in the region. As much as 48.27 per cent (7576.4 quintals) of the total arrival of maize is

recorded during the post-harvest season. Where as 26.61 per cent (4728.5 quintals) of the total arrival is found to be during lean period and 30.12 per cent (3392.6 quintals) during middle period.

Table-5.7
Seasonal Arrival Pattern of Maize in the Sampled Markets of Araria District (2002-2003)

SN	Sampled Markets	Post-harvest Period	Intermediate Period	Lean Period
Regulated Markets				
1	Araria	2016 (47.12)	1370 (32.02)	892 (20.85)
2	Forbesganj	3670 (49.72)	2160 (29.26)	1552 (21.02)
Periodic Markets				
1	Araria Court	510 (50.00)	289 (28.33)	221 (21.67)
2	Chanderdai	119 (46.67)	76.5 (30.00)	59.5 (23.33)
3	Jamua	102 (50.00)	51 (25.00)	51 (25.00)
4	Jokihat	238 (51.85)	119 (25.93)	102 (22.22)
5	Chakai	119 (44.87)	78.2 (29.49)	68 (25.64)
6	Chainpur	69.7 (41.41)	54.4 (32.32)	44.2 (26.26)
7	Amgachi	51 (41.67)	37.4 (30.56)	34 (27.78)
8	Bahptia	49.3 (48.33)	32.3 (31.67)	25.5 (20.00)
9	Dhagawan	62.9 (44.12)	42.5 (32.35)	32.3 (23.53)
10	Gangjahali	34 (35.09)	32.3 (33.33)	30.6 (31.58)
11	Khapra	49.3 (48.33)	32.3 (31.67)	20.4 (20.00)
12	Maina	51 (45.45)	34 (30.3)	27.2 (24.24)
13	Rampur Addi	-	-	-
14	Hanumanganj	-	-	-
15	Chiraiya	-	-	-
16	Parmanpur	34 (37.04)	30.6 (33.33)	27.2 (29.63)
17	Mohani	35.7 (36.84)	32.3 (33.33)	28.9 (29.82)
18	Koskapur	-	-	-
19	Ghurna	-	-	-
20	Khagrah	-	-	-
21	Tamganj	-	-	-
22	Doriasonapur	68 (44.44)	51 (33.33)	34 (22.22)
23	Saifganj	-	-	-
24	Khairkhan	119 (50.00)	68 (28.57)	51 (21.43)
25	Kamladorha	68 (44.44)	52.7 (34.44)	32.3 (21.11)
26	Lalokhur	42.5 (41.67)	32.3 (31.67)	27.2 (26.67)
27	Baghparasi	68 (44.44)	52.7 (34.44)	32.3 (21.11)
	Total	**7576.4 (48.27)**	**4728.5 (30.12)**	**3392.6(21.61)**

Source: Field Survey 2002-2003 (Weight in Quintal and its percentage in bracket)

During post-harvest period a maximum 51.85 per cent (238 quintals) of the market arrival is recorded in Jokihat and minimum

36.84 per cent (35.7 quintals) in Mohani. Similarly, during intermediate period maximum arrival of 34.44 per cent (52.7 quintals) is found in Baghparasi, and minimum market arrival of 25 per cent (51 quintals) in Jamua. (Table-5.7)

Table-5.8

Seasonal Arrival Pattern of Pulses in the Sampled Markets of Araria District (2002-2003)

SN	Sampled Markets	Post-harvest Period	Intermediate Period	Lean Period
Regulated Markets				
1	Araria	1789 (50.72)	1016 (28.81)	722 (20.47)
2	Forbesganj	1920 (46.6)	1360 (33.01)	840 (20.39)
Periodic Markets				
1	Araria Court	306 (40)	255 (33.33)	204 (26.67)
2	Chanderdai	170 (41.67)	119 (29.17)	119 (29.17)
3	Jamua	136 (38.1)	119 (33.33)	102 (28.57)
4	Jokihat	238 (38.89)	204 (33.33)	170 (27.78)
5	Chakai	153 (37.5)	136 (33.33)	119 (29.17)
6	Chainpur	119 (38.89)	102 (33.33)	85 (27.78)
7	Amgachi	102 (40.00)	93.5 (36.67)	59.5 (23.33)
8	Bahptia	76.5 (37.5)	68 (33.33)	59.5 (29.17)
9	Dhagawan	136 (44.44)	85 (27.78)	85 (27.78)
10	Gangjahali	102 (40.00)	85 (33.33)	68 (26.67)
11	Khapra	102 (40.00)	76.5 (30.00)	76.5 (30.00)
12	Maina	102(36.59)	88.4 (31.71)	69.7 (31.71)
13	Rampur Addi	88.4 (34.21)	85 (32.89)	71.4 (32.89)
14	Hanumanganj	110.5 (41.94)	76.5 (29.03)	68 (29.03)
15	Chiraiya	93.5 (40.74)	68 (29.63)	68 (29.63)
16	Parmanpur	79.9 (35.88)	71.4 (32.06)	68 (32.06)
17	Mohani	102 (37.5)	85 (31.25)	68 (31.25)
18	Koskapur	102 (37.5)	85 (31.25)	68 (31.25)
19	Ghurna	85 (41.67)	59.5 (29.17)	59.5 (29.17)
20	Khagrah	68 (36.36)	59.5 (31.82)	59.5 (31.82)
21	Tamganj	51 (37.5)	42.5 (31.25)	34 (31.25)
22	Doriasonapur	153 (36.00)	136 (32.00)	119 (32.00)
23	Saifganj	102 (23.08)	85 (19.23)	68 (19.23)
24	Khairkhan	127.5(40.54)	93.5 (29.73)	85 (29.73)
25	Kamladorha	102 (23.08)	85 (19.23)	68 (19.23)
26	Lalokhur	102 (40.00)	76.5 (30.00)	76.5 (30.00)
27	Baghparasi	85 (41.67)	59.5 (29.17)	59.5 (29.17)
	Total	**6903.3 (43.97)**	**4975.3 (31.69)**	**3819.6 (24.33)**

Source: Field Survey 2002-2003 (Weight in Quintal and its percentage in bracket)

However, during lean period share of market arrival varies between a maximum 31.58 per cent (30.6 quintals) in Gangjahali to 20 per cent (24.17 and 20.4 quintals) of the total arrival of maize in Bahptia and Khapra. Remaining market centers lie between them (Table- 5.7).

5.3.4 Seasonal Arrival Pattern of Pulses

The sampled markets have received 43.97 per cent of total (6903 quintals) market arrival of pulses during post-harvest period, 31.69 per cent (4975.3 quintals) during intermediate period and 24.33 per cent (3819 quintals) during lean period. Its arrival varies from market to market during these three identified periods. It is found that during post-harvest period maximum market arrival i.e. 50.72 per cent (1789 quintals) is received in Araria regulated market while minimum arrival of 36 per cent (153 quintals) is found in Doriasonapur. During intermediate period maximum 36.67 per cent (93.5 quintals) of the marketed surplus of pulses is received in Amgachi, while minimum 27.78 per cent (85 quintals) of marketed surplus of pulses is received in Dhagawan. Besides, during lean period a maximum 32.06 per cent (68 quintals) of the marketed surplus of pulses in Permanpur and minimum 23.33 per cent (59.5 quintals) are being received in Amgachi periodic market (Table-5.8).

5.3.5 Seasonal Arrival Pattern of Potato

The sampled markets received 57.42 per cent (28220 quintals) of total marketed surplus of potato during post-harvest period, 28.46 per cent (13988.7 quintals) during intermediate period, while 14.11 per cent (6935 quintals) during lean period. It is found that during post-harvest period maximum 59.26 per cent (272 quintals) of market arrival of potato is recorded in Mohani and minimum of 50 per cent (51 quintals) in Tamganj. Similarly, during intermediate period maximum 33.33 per

cent (34 quintals) of market arrival is recorded in Tamganj and Kamladorha and minimum 25.93 per cent (119 quintals) of potato is reported in Mohani.

Table-5.9
Seasonal Arrival Pattern of Potato in the Sampled Markets of Araria District (2002-2003)

SN	Sampled Markets	Post-harvest Period	Intermediate Period	Lean Period
Regulated Markets				
1	Araria	7201 (56.31)	3904 (30.53)	1684 (13.17)
2	Forbesganj	9850 (54.22)	4320 (29.53)	2151 (16.24)
Periodic Markets				
1	Araria Court	2210 (54.17)	1190 (29.17)	680 (16.67)
2	Chanderdai	765 (60.00)	340 (26.67)	170 (13.33)
3	Jamua	850 (55.56)	408 (26.67)	272 (17.78)
4	Jokihat	1190 (56.91)	612 (29.27)	289 (13.82)
5	Chakai	663 (56.91)	374 (29.27)	238 (13.82)
6	Chainpur	442 (52.00)	238 (29.33)	136 (18.67)
7	Amgachi	323 (54.17)	187 (29.17)	102 (16.67)
8	Bahptia	306 (52.78)	170 (30.56)	85 (16.67)
9	Dhagawan	391 (54.55)	204 (30.3)	119 (15.15)
10	Gangjahali	272 (57.58)	144.5 (30.3)	93.5 (12.12)
11	Khapra	306 (58.33)	136 (29.17)	68 (12.5)
12	Maina	323 (57.14)	170 (28.57)	68 (14.29)
13	Rampur Addi	238 (58.33)	119 (29.17)	51 (12.5)
14	Hanumanganj	204 (57.14)	102 (28.57)	51 (14.29)
15	Chiraiya	238 (58.33)	119 (29.17)	51 (12.5)
16	Parmanpur	255 (55.56)	136 (29.63)	68 (14.81)
17	Mohani	272 (59.26)	119 (25.93)	68 (14.81)
18	Koskapur	238 (58.33)	119 (29.17)	51 (12.5)
19	Ghurna	136 (53.33)	78.2 (30.67)	40.8 (16)
20	Khagrah	102 (57.14)	51 (28.57)	25.5 (14.29)
21	Tamganj	51 (50.00)	34 (33.33)	17 (16.67)
22	Doriasonapur	289 (56.67)	136 (26.67)	85 (16.67)
23	Saifganj	306 (60.00)	136 (26.67)	68 (13.33)
24	Khairkhan	238 (58.33)	119 (29.17)	51 (12.5)
25	Kamladorha	187 (52.38)	119 (33.33)	51 (14.29)
26	Lalokhur	204 (57.14)	102 (28.57)	51 (14.29)
27	Baghparasi	170 (52.63)	102 (31.58)	51 (15.79)
	Total	**28220 (57.42)**	**13988.7 (28.46)**	**6935.8 (14.11)**

Source: Field Survey 2002-2003 (Weight in Quintal and its percentage in bracket)

Besides, during lean period maximum arrival of 18.67 per cent (136 quintals) in Chainpur to minimum 12.5 per cent (51 quintals) of

marketed surplus of potato is received in Koskapur, Khairkhan, Chiraiya and Khapra periodic markets (Table-5.9).

Table-5.10 Seasonal Arrival Pattern of Onion in the Sampled Markets of Araria District (2002-2003)

SN	Sampled Markets	Post-harvest Period	Intermediate Period	Lean Period
Regulated Markets				
1	Araria	5703 (53.19)	3252 (30.33)	1766 (16.47)
2	Forbesganj	6620 (52.32)	3950 (31.22)	2084 (16.47)
Periodic Markets				
1	Araria Court	1530 (64.29)	1105 (26.79)	425 (8.93)
2	Chanderdai	663 (54.17)	374 (30.56)	187 (15.28)
3	Jamua	782 (58.97)	374 (28.21)	170 (12.82)
4	Jokihat	1394 (60.74)	561 (24.44)	340 (14.81)
5	Chakai	765 (58.44)	408 (31.17)	136 (10.39)
6	Chainpur	510 (58.82)	221 (25.49)	136 (15.69)
7	Amgachi	425 (59.52)	204 (28.57)	85 (11.9)
8	Bahptia	459 (60.00)	221 (28.89)	85 (11.11)
9	Dhagawan	340 (55.56)	204 (33.33)	68 (11.11)
10	Gangjahali	408 (61.54)	187 (28.21)	68 (10.26)
11	Khapra	425 (59.52)	204 (28.57)	85 (11.9)
12	Maina	442 (57.78)	221 (28.89)	102 (13.33)
13	Rampur Addi	357 (58.33)	187 (30.56)	68 (11.11)
14	Hanumanganj	340 (60.61)	153 (27.27)	68 (12.12)
15	Chiraiya	425 (64.1)	170 (25.64)	68 (10.26)
16	Parmanpur	408 (57.14)	204 (28.57)	102 (14.29)
17	Mohani	425 (59.52)	187 (26.19)	102 (14.29)
18	Koskapur	425 (59.52)	204 (28.57)	85 (11.9)
19	Ghurna	408 (61.54)	187 (28.21)	68 (10.26)
20	Khagrah	187 (52.38)	119 (33.33)	51 (14.29)
21	Tamganj	238 (58.33)	119 (29.17)	51 (12.5)
22	Doriasonapur	357 (58.33)	187 (30.56)	68 (11.11)
23	Saifganj	425 (64.1)	170 (25.64)	68 (10.26)
24	Khairkhan	408 (61.54)	187 (28.21)	68 (10.26)
25	Kamladorha	442 (61.9)	204 (28.57)	68 (9.52)
26	Lalokhur	374 (61.11)	170 (27.78)	68 (11.11)
27	Baghparasi	340 (60.61)	153 (27.27)	68 (12.12)
	Total	**26025 (55.47)**	**14087 (30.02)**	**6808 (14.51)**

Source: Field Survey 2002-2003 (Weight in Quintal and its percentage in bracket)

5.3.6 Seasonal Arrival Pattern of Onion

Seasonal arrival pattern of onion is different than that of food grains due to being a commercial crop. Its market arrival is maximum in

the post-harvest period. More than 55 per cent (26025 quintals) of market arrival has been recorded during first four busiest months. 30.02 per cent (14087 quintals) of its market arrival is received during intermediate. The seasonal pattern of market arrival varies from market to market. During the post-harvest period maximum arrival of 64.29 per cent (1530 quintals) is found in Araria Court and minimum 52.32 per cent (6620 quintals) is received in Forbesganj regulated market. During intermediate period maximum arrival of 33.33 per cent (204 quintals) is received in Dhagawan and Khagrah and minimum arrival of 25.64 per cent (170 quintals) in Saifganj and Chiraiya market centers. Moreover, during lean period maximum arrival of 16.47 per cent (1766 quintals) is received in Araria and Forbesganj regulated markets while minimum arrival of 9.52 per cent (68 quintals) is received in Kamladorha market (Table-5.10).

Seasonal arrival pattern of marketed surplus is discussed on the basis of three main periods (1) post-harvest period (2) intermediate period and (3) lean period. The study of the seasonal pattern of marketing of selected crops indicates that the arrivals do not follow any definite seasonal pattern during an agricultural year. It is due to the fact that most commodities have a different growing time during an agriculture year. Study reveals that average marketed surplus for the district as a whole during post-harvest period is 51.62 per cent and during intermediate period it is 29.40 per cent. Whereas during lean period it constitutes 18.98 per cent (Table-5.4). The marketed surplus varies spatially and temporally to crop-wise and market-wise variations. Similarly, the study finds that proportion of marketed surplus of potato and onion is highest i.e. 57.42 per cent and 55.47 per cent respectively during post-harvest period. While during lean period their share of total marketed surplus is 14.11 per cent and 14.51 per cent respectively.

Largest proportion of marketed surplus of potato and onion during post-harvest period is due to the fact that they are cash crop and of perishable nature as well, hence the farmers immediately wish to sell them immediately. Moreover, highest marketed surplus during post-harvest period indicates that small and marginal farmers sell a large quantity of their surplus particularly as distress sale immediately after the harvest. The result further shows that seasonality of arrivals is found more pronounced in cash crops than that in non-cash crops. It means that producer sellers lack storing facilities and consequently sell their produce in the market immediately after the harvest. This supports the hypothesis that there is a wide fluctuation in seasonal arrival patterns of the marketed surplus.

5.4 Growth of Marketed Surplus of Agricultural Commodities

An assessment of the growth of the marketed surplus of all selected commodities in different markets of the district of Araria during 1993-2003 has been done. It reveals a positive growth at an average annual rate of 3.23 per cent (from 357872 quintals to 473389 quintals) in all selected markets during the period of 1993-2003. The general trend in the growth of marketed surplus has been result of the agricultural development of Araria district, because there is horizontal and vertical growth in agriculture in terms of area and production respectively, during post-green revolution period. The growth of marketed surplus of different agricultural commodities is not uniform in every market but varies among the periodic markets and regulated markets, spatially and temporally. The annual variation is from maximum 7.66 per cent in Forbesganj regulated market to a minimum 0.79 per cent in Lalokhur periodic market. It is evident from Table 5.11 that maximum growth rate in the marketed surplus of different crops is

found in regulated markets. Maximum growth has been recorded in the Forbesganj regulated market growing from 82286 quintals to 145357 quintals during 1993-2003 at the average rate of 7.66 per cent annually.

Table 5.11
Growth of Marketed Surplus of the Selected Agricultural-Commodities in the Sampled Markets of Araria District (1993-2003)

S N	Sampled Markets	Marketed surplus (in quintals)		Variation	Growth (in percent)	
Regulated Markets		**1992-93**	**2002-03**		**Decadal**	**Annual**
1	Araria	96520	125586	29066	30.11	3.01
2	Forbesganj	82286	145357	63071	76.65	7.66
Periodic Markets						
1	Araria Court	35792	42330	6538	18.27	1.83
2	Chanderdai	11133	12852	1719	15.44	1.54
3	Jamua	6269	7140	871	13.89	1.39
4	Jokihat	27438	30957	3519	12.83	1.28
5	Chakai	7124	8000.2	876.2	12.30	1.23
6	Chainpur	3508	3942.3	434.3	12.38	1.24
7	Amgachi	4456	5069.4	613.4	13.77	1.38
8	Bahptia	4159	4595.1	436.1	10.49	1.05
9	Dhagawan	3843	4268.7	425.7	11.08	1.11
10	Gangjahali	3972	4431.9	459.9	11.58	1.16
11	Khapra	4686	5202	516	11.01	1.10
12	Maina	3660	4044.3	384.3	10.50	1.05
13	Rampur Addi	3482	3865.8	383.8	11.02	1.10
14	Hanumanganj	3499	3927	428	12.23	1.22
15	Chiraiya	3835	4258.5	423.5	11.04	1.10
16	Parmanpur	6816	7655.1	839.1	12.31	1.23
17	Mohani	3482	3870.9	388.9	11.17	1.12
18	Koskapur	4415	4794	379	8.58	0.86
19	Ghurna	3981	4437	456	11.45	1.15
20	Khagrah	3186	3476.5	290.5	9.12	0.91
21	Tamganj	2970	3289.5	319.5	10.76	1.08
22	Doriasonapur	8460	9384	924	10.92	1.09
23	Saifganj	3401	3621	220	6.47	0.65
24	Khairkhan	3917.35	4369	451.65	11.53	1.15
25	Kamladorha	4049	4437	388	9.58	0.96
26	Lalokhur	3781	4080	299	7.91	0.79
27	Baghparasi	3752	4148	396	10.55	1.06
	Total	**357872**	**473389**	**115516.6**	**32.28**	**3.23**

Source: Field Survey 2002-2003 and records of market centers and other govt agencies

Moreover, among the periodic market centers, maximum growth in marketed surplus is recorded in Araria Court. Marketed surplus grew form 35792 quintals to 42330 quintals at the annual rate of 1.83 per cent during same period.

Table-5.12
Growth of Marketed Surplus of Rice in the Sampled Markets (1993-2003)

SN	Sampled Markets	Marketed surplus (in quintals)		Variation	Growth (in percent)	
Regulated Markets		**1992-93**	**2002-03**		**Decadai**	**Annual**
1	Araria	40342	67595	27253	67.55	6.76
2	Forbesganj	57201	72341	15140	26.47	2.65
Periodic Markets						
1	Araria Court	14907	18870	3963	26.58	2.66
2	Chanderdai	4656	5610	954	20.49	2.05
3	Jamua	1796	2040	244	13.59	1.36
4	Jokihat	12796	14790	1994	15.58	1.56
5	Chakai	2296	2550	254	11.06	1.11
6	Chainpur	905	1020	115	12.71	1.27
7	Amgachi	1632	1785	153	9.38	0.94
8	Bahptia	1438	1632	194	13.49	1.35
9	Dhagawan	1233	1377	144	11.68	1.17
10	Gangjahali	1420	1581	161	11.34	1.13
11	Khapra	1846	2040	194	10.51	1.05
12	Maina	1209	1326	117	9.68	0.97
13	Rampur Addi	1096	1224	128	11.68	1.17
14	Hanumanganj	1149	1275	126	10.97	1.10
15	Chiraiya	1279	1428	149	11.65	1.16
16	Parmanpur	2970	3315	345	11.62	1.16
17	Mohani	1206	1326	120	9.95	1.00
18	Koskapur	1624	1785	161	9.91	0.99
19	Ghurna	1517	1632	115	7.58	0.76
20	Khagrah	1192	1377	185	15.52	1.55
21	Tamganj	1297	1479	182	14.03	1.40
22	Doriasonapur	3655	4080	425	11.63	1.16
23	Saifganj	847	918	71	8.38	0.84
24	Khairkhan	1392	1530	138	9.91	0.99
25	Kamladorha	1411	1632	221	15.66	1.57
26	Lalokhur	1451	1530	79	5.44	0.54
27	Baghparasi	1521	1632	111	7.30	0.73
	Total	**167284**	**220720**	**53436**	**31.94**	**3.19**

Source: Field Survey 2002-2003 and records of market centers and other govt agencies

5.4.1 Growth of Marketed Surplus of Rice

Rice is the important crop in the study area, which constitutes around 46.63 per cent (220720 quintals) of marketed surplus in the selected markets in 2002-2003. Table-5.12 shows that average annual growth in the marketed surplus of rice records an increase of 3.19 per cent during 1993-2003. Market-wise variation in growth of marketed surplus of rice is very obvious as evident from the table. Among regulated markets highest annual growth is recorded in Araria with 6.76 per cent. Whereas among the periodic or primary markets, Araria Court has registered highest growth of 2.66 per cent annually. Moreover, the minimum growth of 0.54 per cent recorded in Lalokhur during same period.

5.4.2 Growth of Marketed Surplus of Wheat

Wheat is the second largest marketed crop in the study area. It constitutes 26.45 per cent (125209 quintals) of total marketed crops in the study area and shows an average annual growth at the rate of 3.02 percent during 1993-2003. Study reveals that the regulated markets like Forbesganj and Araria have recorded highest growth rate of wheat marketed surplus at the average annual rate of 9.82 per cent and 3.58 per cent respectively. While, among the periodic markets maximum growth of marketed surplus of wheat is recorded in Amgachi and lowest at Khagrah periodic markets centers. The highest and lowest growth rates of marketed surplus of wheat for these two markets have been recorded as 1.78 and 0.39 per cent during the discussed period in the study area respectively (Table-5.13).

Table-5.13
Growth of Marketed Surplus of Wheat in the Sampled Markets (1993-2003)

S N	Sampled Markets	Marketed surplus (in quintals)		Variation	Growth (in percent)	
Regulated Markets		**1992-93**	**2002-03**		**Decadal**	**Annual**
1	Araria	19642	26676	7034	35.81	3.58
2	Forbesganj	16420	32539	16119	98.17	9.82
Periodic Markets						
1	Araria Court	13226	14535	1309	9.90	0.99
2	Chanderdai	3672	4080	408	11.11	1.11
3	Jamua	1507	1683	176	11.68	1.17
4	Jokihat	9746	10710	964	9.89	0.99
5	Chakai	1921	2193	272	14.16	1.42
6	Chainpur	711	765	54	7.59	0.76
7	Amgachi	1342	1581	239	17.81	1.78
8	Bahptia	1233	1326	93	7.54	0.75
9	Dhagawan	1032	1122	90	8.72	0.87
10	Gangjahali	1210	1326	116	9.59	0.96
11	Khapra	1454	1581	127	8.73	0.87
12	Maina	920	1020	100	10.87	1.09
13	Rampur Addi	1242	1377	135	10.87	1.09
14	Hanumanganj	1332	1479	147	11.04	1.10
15	Chiraiya	1392	1530	138	9.91	0.99
16	Parmanpur	2538	2856	318	12.53	1.25
17	Mohani	948	1020	72	7.59	0.76
18	Koskapur	1538	1632	94	6.11	0.61
19	Ghurna	1441	1683	242	16.79	1.68
20	Khagrah	1326	1377	51	3.85	0.39
21	Tamganj	1100	1173	73	6.64	0.66
22	Doriasonapur	3443	3621	178	5.17	0.52
23	Saifganj	1216	1275	59	4.85	0.49
24	Khairkhan	1123	1224	101	8.99	0.90
25	Kamladorha	1209	1326	117	9.68	0.97
26	Lalokhur	1126	1224	98	8.70	0.87
27	Baghparasi	1128	1275	147	13.03	1.30
	Total	**96138**	**125209**	**29071**	**30.24**	**3.02**

Source: Field Survey 2002-2003 and records of market centers and other govt agencies

5.4.3 Growth of Marketed Surplus of Maize

Maize is the third important food crop in the study region. It constitutes 3.32 per cent of the total marketed surplus of agricultural products in the markets of the study area during 2002-2003.

Table-5.14
Growth of Marketed Surplus of Maize in the Sampled Markets (1993-2003)

SN	Sampled Markets	Marketed surplus (in quintals)		Variation	Growth (in percent)	
Regulated Markets		**1992-93**	**2002-03**		**Decadal**	**Annual**
1	Araria	3220	4278	1058	32.86	3.29
2	Forbesganj	2662	7382	4720	177.31	17.73
Periodic Markets						
1	Araria Court	955	1020	65	6.81	0.68
2	Chanderdai	241	255	14	5.81	0.58
3	Jamua	192	204	12	6.25	0.63
4	Jokihat	441	459	18	4.08	0.41
5	Chakai	264	265.2	1.2	0.45	0.05
6	Chainpur	161	168.3	7.3	4.53	0.45
7	Amgachi	113	122.4	9.4	8.32	0.83
8	Bahptia	99	107.1	8.1	8.18	0.82
9	Dhagawan	129	137.7	8.7	6.74	0.67
10	Gangjahali	91	96.9	5.9	6.48	0.65
11	Khapra	95	102	7	7.37	0.74
12	Maina	103	112.2	9.2	8.93	0.89
13	Rampur Addi	-	-	-	-	-
14	Hanumanganj	-	-	-	-	-
15	Chiraiya	-	-	-	-	-
16	Parmanpur	86	91.8	5.8	6.74	0.67
17	Mohani	90	96.9	6.9	7.67	0.77
18	Koskapur	-	-	-	-	-
19	Ghurna	-	-	-	-	-
20	Khagrah	-	-	-	-	-
21	Tamganj	-	-	-	-	-
22	Doriasonapur	-	-	-	-	-
23	Saifganj	-	-	-	-	-
24	Khairkhan	145.35	238	92.65	63.74	6.37
25	Kamladorha	223	239	16	7.17	0.72
26	Lalokhur	95	102	7	7.37	0.74
27	Baghparasi	143	153	10	6.99	0.70
	Total	**9548.35**	**15697.5**	**6149.15**	**64.40**	**6.44**

Source: Field Survey 2002-2003 and records of market centers and other govt agencies

It has also recorded positive growth at an average annual rate of 6.44 per cent. Similarly, among the surveyed markets, the regulated markets of the district have shown highest growth in their marketed surplus. It is because of good price structure and better infrastructural facilities available in regulated markets than that of primary (rural/periodic)

markets centers. Forbesganj has recorded highest average annual growth at the rate of 17.73 per cent, followed by Khairkhan with 6.37 per cent growth during the same period. The minimum rate of growth i.e. 0.05 per cent is being recorded in Chakai market (Table-5.14).

Table-5.15
Growth of Marketed Surplus of Pulses in the Sampled Markets (1993-2003)

SN	Sampled Markets	Marketed surplus (in quintals)		Variation	Growth (in percent)	
Regulated Markets		**1992-93**	**2002-03**		**Decadal**	**Annual**
1	Araria	2617	3527	910	34.77	3.48
2	Forbesganj	3220	4120	900	27.95	2.80
Periodic Markets						
1	Araria Court	700	765	65	9.29	0.93
2	Chanderdai	390	408	18	4.62	0.46
3	Jamua	333	357	24	7.21	0.72
4	Jokihat	575	612	37	6.43	0.64
5	Chakai	378	408	30	7.94	0.79
6	Chainpur	291	306	15	5.15	0.52
7	Amgachi	246	255	9	3.66	0.37
8	Bahptia	197	204	7	3.55	0.36
9	Dhagawan	296	306	10	3.38	0.34
10	Gangjahali	241	255	14	5.81	0.58
11	Khapra	237	255	18	7.59	0.76
12	Maina	251	260.1	9.1	3.63	0.36
13	Rampur Addi	239	244.8	5.8	2.43	0.24
14	Hanumanganj	240	255	15	6.25	0.63
15	Chiraiya	215	229.5	14.5	6.74	0.67
16	Parmanpur	215	219.3	4.3	2.00	0.20
17	Mohani	245	255	10	4.08	0.41
18	Koskapur	243	255	12	4.94	0.49
19	Ghurna	201	204	3	1.49	0.15
20	Khagrah	180	187	7	3.89	0.39
21	Tamganj	125	127.5	2.5	2.00	0.20
22	Doriasonapur	395	408	13	3.29	0.33
23	Saifganj	244	255	11	4.51	0.45
24	Khairkhan	296	306	10	3.38	0.34
25	Kamladorha	240	255	15	6.25	0.63
26	Lalokhur	247	255	8	3.24	0.32
27	Baghparasi	197	204	7	3.55	0.36
	Total	**13449**	**15698.2**	**2249.2**	**16.72**	**1.67**

Source: Field Survey 2002-2003 and records of market centers and other govt agencies

Table-5.16
Growth of Marketed Surplus of Potato in the Sampled Markets (1993-2003)

S N	Sampled Markets	Marketed surplus (in quintals)		Variation	Growth (in percent)	
Regulated Markets		**1992-93**	**2002-03**		**Decadal**	**Annual**
1	Araria	8220	12789	4569	55.58	5.56
2	Forbesganj	11990	16321	4331	36.12	3.61
Periodic Markets						
1	Araria Court	3345	4080	735	21.97	2.20
2	Chanderdai	1098	1275	177	16.12	1.61
3	Jamua	1294	1530	236	18.24	1.82
4	Jokihat	1817	2091	274	15.08	1.51
5	Chakai	1106	1275	169	15.28	1.53
6	Chainpur	687	816	129	18.78	1.88
7	Amgachi	503	612	109	21.67	2.17
8	Bahptia	503	561	58	11.53	1.15
9	Dhagawan	606	714	108	17.82	1.78
10	Gangjahali	431	510	79	18.33	1.83
11	Khapra	421	510	89	21.14	2.11
12	Maina	491	561	70	14.26	1.43
13	Rampur Addi	357	408	51	14.29	1.43
14	Hanumanganj	291	357	66	22.68	2.27
15	Chiraiya	346	408	62	17.92	1.79
16	Parmanpur	387	459	72	18.60	1.86
17	Mohani	376	459	83	22.07	2.21
18	Koskapur	349	408	59	16.91	1.69
19	Ghurna	211	255	44	20.85	2.09
20	Khagrah	160	178.5	18.5	11.56	1.16
21	Tamganj	94	102	8	8.51	0.85
22	Doriasonapur	441	510	69	15.65	1.57
23	Saifganj	463	510	47	10.15	1.02
24	Khairkhan	365	408	43	11.78	1.18
25	Kamladorha	320	357	37	11.56	1.16
26	Lalokhur	316	357	41	12.97	1.30
27	Baghparasi	276	323	47	17.03	1.70
	Total	**37264**	**49144.5**	**11880.5**	**31.88**	**3.19**

Source: Field Survey 2002-2003 and records of market centers and other govt agencies.

5.4.4 Growth of Marketed Surplus of Pulses

Pulses constitute 3.32 per cent of the marketed surplus of total marketed agricultural products in the study area during 2002-2003. Their marketed surplus has recorded lowest growth among the sampled crops due to decline of area under pulses cultivation. It records only

1.67 per cent annual growth in its marketed surplus in the sampled market centers. Araria and Forbesganj have recorded maximum annual growth of 3.48 per cent and 2.80 per cent respectively. Whereas, all the periodic markets have recorded below one per cent growth rate of marketed surplus of pulses, ranging between 0.93 per cent in Araria Court to 0.15 per cent in Ghurna (Table-5.15).

5.4.5 Growth of Marketed Surplus of Potato

The commercial crops, potato and onion, constitute 10.38 and 9.91 per cent of the total marketed surplus of the selected commodities. Annual growth rate of marketed surplus of potato is 3.19 per cent. The growth rate of marketed surplus of potato varies from market to market. Maximum annual growth rate has been recorded in Araria regulated market as 5.56 per cent. The annual growth rate of marketed surplus among the periodic markets varies between 0.85 per cent in Tamganj and 2.27 per cent in Hanumanganj (Table-5.16).

5.4.6 Growth of Marketed Surplus of Onion

Onion also shows a remarkable growth i.e. 3.74 per cent per annum in its marketed surplus. Araria and Forbesganj regulated markets record 9.08 per cent and 6.54 per cent annual growth rates respectively. Among periodic markets maximum growth of the marketed surplus is recorded 1.64 per cent in Doriasonapur, while minimum annual growth i.e. 0.51 per cent has been recorded in Saifganj (Table- 5.17).

Wide difference in the growth of marketed surplus of these selected commodities in regulated and periodic markets is attributed to the fact that market regulation restricts malpractice in the transaction of agricultural commodities in the regulated markets, thus becoming an incentive for the farmers to sell their produce there. That is why marketed surplus has increased sharply in regulated markets than the periodic markets. It supports the hypothesis that government

intervention in terms of regulation measure leads to greater market efficiency, and consequent to it there is rapid increase in marketed surplus in the regulated markets in comparison to periodic market centers.

Table 5.17
Growth of Marketed Surplus of Onion in the Sampled Markets (1993-2003)

SN	Sampled Markets	Marketed surplus (in quintals)		Variation	Growth (in percent)	
Regulated Markets		**1992-93**	**2002-03**		**Decadal**	**Annual**
1	Araria	5620	10721	5101	90.77	9.08
2	Forbesganj	7652	12654	5002	65.37	6.54
Periodic Markets						
1	Araria Court	2659	3060	401	15.08	1.51
2	Chanderdai	1076	1224	148	13.75	1.38
3	Jamua	1147	1326	179	15.61	1.56
4	Jokihat	2063	2295	232	11.25	1.13
5	Chakai	1159	1309	150	12.94	1.29
6	Chainpur	753	867	114	15.14	1.51
7	Amgachi	620	714	94	15.16	1.52
8	Bahptia	689	765	76	11.03	1.10
9	Dhagawan	547	612	65	11.88	1.19
10	Gangjahali	579	663	84	14.51	1.45
11	Khapra	633	714	81	12.80	1.28
12	Maina	686	765	79	11.52	1.15
13	Rampur Addi	548	612	64	11.68	1.17
14	Hanumanganj	487	561	74	15.20	1.52
15	Chiraiya	603	663	60	9.95	1.00
16	Parmanpur	620	714	94	15.16	1.52
17	Mohani	617	714	97	15.72	1.57
18	Koskapur	661	714	53	8.02	0.80
19	Ghurna	611	663	52	8.51	0.85
20	Khagrah	328	357	29	8.84	0.88
21	Tamganj	354	408	54	15.25	1.53
22	Doriasonapur	526	612	86	16.35	1.64
23	Saifganj	631	663	32	5.07	0.51
24	Khairkhan	596	663	67	11.24	1.12
25	Kamladorha	646	714	68	10.53	1.05
26	Lalokhur	546	612	66	12.09	1.21
27	Baghparasi	487	561	74	15.20	1.52
	Total	**34144**	**46920**	**12776**	**37.42**	**3.74**

Source: Field Survey 2002-2003 and records of market centers and other govt agencies

5.5 Village Level Marketed Surplus of Agricultural Commodities

The transaction of marketed surplus at village level, on the basis of size of land holdings of farmers growing different agricultural commodities at village level is given in the Tables- 5.18 to 5.24. An overview of these tables indicates that the village level transactions of various crops .i.e. rice, wheat, maize, pulses, potato, onion constitute a high share of the total transactions of these crops performed through different market agencies.

Table-5.18
Village Level Marketed Surplus of Agricultural-Commodities According to Size of Land Holding in Araria District (2002-2003)

S N	Size of Holding (in Acres)	Village	Rural/Periodic Markets	Main Markets	Overall
1	Up to 2 Acres	1343.5 (71.05)	547.54 (28.95)	-	1891.04 (100)
2	2.1-4 Acres	2746.56 (54.62)	1179.22 (23.45)	1102.33 (21.92)	5028.11 (100)
3	4.1-8 Acres	9303.15 (32.36)	2948.35 (10.26)	16496.55 (57.38)	28748.1 (100)
4	Above 8 Acres	13791.09 (41.49)	2948.35 (8.87)	16496.55 (49.63)	33236.05 (100)
	District Total	**27184.3 (39.45)**	**7623.46 (11.06)**	**34095.4 (49.48)**	**68903.16 (100)**

Source: Field Survey 2002-2003 (Weight in Quintal and its percentage in bracket)

The share of village level sale for all the selected crops is 39.45 per cent. For the rice it is 52.38 per cent, for wheat 31.97 per cent, for maize 46.59 per cent. While pulses, potato and onion it is 45.88, 50.72 and 50.63 per cent respectively. The sale of selected agro-commodities in weekly/periodic markets is 11.06 per cent and it varies according to size of holding. The highest selling activities for all commodities in the weekly markets are performed by those villagers who belong to lowest socio-economic stratum, having a holding up to 2 acres. They have contributed 28.95 per cent of marketed surplus in the periodic markets during 2002-2003. The sale of rice, wheat, maize, pulses, potato, and

onion is 11.32 per cent, 21.72 per cent, 16.36 per cent, 16.02 per cent, 10.87 per cent, and 11.63 per cent respectively to the total marketed surplus of these crops in the periodic markets as evident from the village level survey. Through the Table 5.18, it is found that 49.48 per cent of total marketed surplus of all agricultural commodities are marketed in regulated/urban markets in the study area. But the proportion of marketed surplus exchanged in these markets varies according to the nature of crop.

Table-5.19
Village Level Marketed Surplus of Rice According to Size of Land Holding

S N	Size of Holding (in Acres)	Village	Rural/Periodic Markets	Main Markets	Overall
1	Up to 2 Acres	542.8 (70.05)	232.1 (29.95)	-	774.9 (100)
2	2.1-4 Acres	1101.7 (61.97)	285.2 (16.04)	391 (21.99)	1777.9 (100)
3	4.1-8 Acres	4395.3 (55.86)	1299.5 (16.52)	2173.5 (27.62)	7868.3 (100)
4	Above 8 Acres	6617.1 (48.14)	917.7 (6.68)	6210 (45.18)	13744.8 (100)
	District Total	**12656.9 (52.38)**	**2734.5 (11.32)**	**8774.5 (36.31)**	**24165.9 (100)**

Table-5.20
Village Level Marketed Surplus of Wheat According to Size of Land Holding

S N	Size of Holding (in Acres)	Village	Rural/Periodic Markets	Main Markets	Overall
1	Up to 2 Acres	334.1 (63.77)	189.8 (36.23)	-	523.9 (100)
2	2.1-4 Acres	622.7 (41.53)	564.2 (37.63)	312.4 (20.84)	1499.3 (100)
3	4.1-8 Acres	1701.7 (39.59)	1206.4 (28.06)	1390.61 (32.35)	4298.71 (100)
4	Above 8 Acres	1730.3 (23.38)	1020.5 (13.79)	4651.4 (62.84)	7402.2 (100)
	District Total	**4388.8 (31.97)**	**2980.9 (21.72)**	**6354.41 (46.30)**	**13724.11 (100)**

Source: Field Survey 2002-2003 (Weight in Quintal and its percentage in bracket)

Table-5.21

Viliage Level Marketed Surplus of Maize According to Size of Land Holding

S N	Size of Holding (in Acres)	Village	Rural/Periodic Markets	Main Markets	Overall
1	Up to 2 Acres	55.4 (62.78)	32.84 (37.22)		88.24 (100)
2	2.1-4 Acres	136.32 (58.52)	51.52 (22.12)	45.12 (19.37)	232.96 (100)
3	4.1-8 Acres	144.64 (45.75)	66.88 (21.15)	104.64 (33.10)	316.16 (100)
4	Above 8 Acres	614.4 (43.78)	182.72 (13.02)	606.4 (43.21)	1403.52 (100)
	District Total	**950.76 (46.59)**	**333.96 (16.36)**	**756.16 (37.05)**	**2040.88 (100)**

Table 5.22

Village Level Marketed Surplus of Pulses According to Size of Land Holding

S N	Size of Holding (in Acres)	Village	Rural/Periodic Markets	Main Markets	Overall
1	Up to 2 Acres	60.2 (66.81)	29.9 (33.19)		90.1 (100)
2	2.1-4 Acres	149.9 (55.54)	63 (23.34)	57 (21.12)	269.9 (100)
3	4.1-8 Acres	164.91 (45.73)	74.82 (20.75)	120.9 (33.52)	360.63 (100)
4	Above 8 Acres	733.44 (43.26)	219.26 (12.93)	742.84 (43.81)	1695.54 (100)
	District Total	**1108.45 (45.88)**	**386.98 (16.02)**	**920.74 (38.11)**	**2416.17 (100)**

Table 5.23

Village Level Marketed Surplus of Potato According to Size of Land Holding

S N	Size of Holding (in Acres)	Village	Rural/Periodic Markets	Main Markets	Overall
1	Up to 2 Acres	188.8 (79.19)	49.6 (20.81)		238.4 (100)
2	2.1-4 Acres	411.94 (60.44)	110.3 (16.18)	159.31 (23.37)	681.55 (100)
3	4.1-8 Acres	1528.6 (54.80)	457.6 (16.40)	803.25 (28.80)	2789.45 (100)
4	Above 8 Acres	2295.85 (45.78)	331.17 (6.60)	2387.91 (47.62)	5014.93 (100)
	District Total	**4425.19 (50.72)**	**948.67 (10.87)**	**3350.47 (38.40)**	**8724.33 (100)**

Source Field Survey 2002-2003 (Weight in Quintal and its percentage in bracket)

Table-5.24
Village Level Marketed Surplus of Onion According to Size of Land Holding

S N	Size of Holding (in Acres)	Village	Rural/Periodic Markets	Main Markets	Overall
1	Up to 2 Acres	162.2 (80.10)	40.3 (19.90)	-	202.5 (100)
2	2.1-4 Acres	324 (57.19)	105 (18.53)	137.5 (24.27)	566.5 (100)
3	4.1-8 Acres	1368 (55.30)	417 (16.86)	688.7 (27.84)	2473.7 (100)
4	Above 8 Acres	1800 (45.28)	277 (6.97)	1898 (47.75)	3975 (100)
	District Total	**3654.2 (50.63)**	**839.3 (11.63)**	**2724.2 (37.74)**	**7217.7 (100)**

Source Field Survey 2002-2003 (Weight in Quintal and its percentage in bracket)

Wheat has recorded 46.30 per cent, rice 36.3 per cent, maize 37.05 per cent. pulses 38.11 per cent, potato 38.40 per cent and onion 37.74 per cent share of their total marketed surplus in regulated markets (Tables- 5.18, 5.19, 5.20, 5.21. 5.22, 5.23 and 5.24). The marketed surplus of agricultural commodities transacted at inter and intra-village levels stood at second rank with reference to total marketed surplus of the district. The village sale accounted for 39 per cent of marketed surplus of agricultural commodities.

Crop-wise analysis shows that rice is the most important commodity transacted at village level. Large quantity of its marketed surplus is exchanged at village level because it is a staple food. Inter and intra-village demand of rice is very high. Similarly maize, pulses, potato and onions also have appreciable shares at the village level sale in the study area. Their shares range between 40 to 50 per cent of the total marketed surplus of respective crops. The large share of marketed surplus of these crops at village level is attributed to their small size of surplus available with individual producer which do not seem to be economically viable if transacted in distant big markets, due to high transport and time cost incurred per unit of weight.

However, big farmers having highest size of land holding, above 8 acres sell 49.63 per cent of their total marketed surplus in the main (regulated and urban) markets. Whereas farmers with, lowest size of land holding, up to 2 acres, have almost no surplus to sell in the main market centers (regulated and urban). Farmers with 2.1 to 4 acres and 4.1 to 8 acres size of holdings contribute 21.92 per cent and 57.38 per cent of their total marketed surplus in the main market centers (regulated and urban). Proportion of marketed surplus varies crop-wise too. Big farmers with more than 8 acres of holding contribute 45.18 per cent rice, 62.84 per cent wheat, 43.21 per cent maize, 43.81 per cent pulses, 47.62 per cent potato and 47.75 per cent onion of marketed surplus in the main markets(regulated and urban). It is on account of the fact that they have their own means of transportation and hence they do not find any difficulty in selling their produce in the main market centers (regulated and urban). The disincentive to the poor farmers with small size of holding to sell in main markets (regulated and urban) is, the lack of transportation facilities and also that they have small quantity of surpluses to sell in the main market centers (regulated and urban). Thus it is found that, proportion of sale of marketed surplus in the main (regulated and urban) market centers rises as the size of land holding of the farmer increases.

No doubt, the sale of all foodgrains and other important crops in the main (regulated and urban) market centers is influenced by the availability of transportation facilities and better market accessibility. The large proportion of sale can be attracted in the main market centers (regulated and urban) by providing farmers, particularly the small farmers the better communication and transport facilities. Thus, one of the important reasons for the highest sale at the village level is due to poor communication and transport facilities. Recently, the establishment

of market yard (Regulated Market) has also not been able to attract large number of farmers to sell their produce in new market centers. Participation of farmers in the market yard (Regulated Market) is also determined by their size of land holding. It supports the findings of this study that the big farmers are more dominant in selling their produce in the market yard and urban market centers than the small one. The reason is well known that these farmers are well equipped with better transportation facilities and are better informed about the market conditions.

References

(1) Ibrahim, R. (1984*), Market Centers and Regional Development*, B.R Publishing Corporation, pp. 81-82.

(2) Kahlon, A.S &George, M.V. (1985), *Agricultural Marketing and Price Policies*, Allied Publishers, Delhi, p-13.

(3) Prasad, J. (1989), *Marketable Surplus and Market Performance*, Mittal Publication, Delhi, p-44.

(4) Saxena, P. (2003), *Marketing and Sustainable Development*, Rawat Publication Jaipur, p-118.

CHAPTER-6

SPATIO-TEMPORAL PATTERNS OF PRICE STRUCTURE AND MARKETING COSTS

6.1 Introduction

There are several factors which determine the price of an agro-commodity in a given market. Some very important factors are demand and supply of the commodity, traders' travel costs, market charges, durability of commodity and storage facilities etc[1]. Among the above said factors, market arrivals of the commodities play an important role in determining price of agro-commodities as they represent the supply side[2]. Generally the market arrivals of different agricultural commodities are high during the immediate post-harvest period. The main reason behind it is the low storage/holding capacity due to lack of the infrastructure and distress sale by the farmers. This abnormal arrival causes lowering of price of the commodity to a considerable extent in the markets. Further, the price of a commodity is found being directly proportional to the size of land holding and storing capacity of the growers during glut period.

In this chapter, an effort has been made to understand the price structure of the selected commodities and its variation at different points of time in an agricultural year in the sampled markets and villages, i.e. its spatio-temporal variations.

Data for the agricultural year 2002-2003 have been collected with the help of structured schedules from the sampled markets. The schedules contain information about the commodities which are handled and transacted on the market day. The selected variables are related to (a) commodities-wise arrival (b) wholesale purchase price (c) wholesale sale price, and (d) retail price. Arrival of each selected crop has been

---

1 Khan N. (1991), *Agricultural Development and Marketing*, H. K. Publishers and Distributors. Delhi, p.202.

2 Prasad, J. (1989), *Marketable Surplus and Market Performance*, Mittal Publication, Delhi, p-139.

studied with reference to three distinct periods i.e. (a) post-harvest period (b) intermediate period and (c) lean period (pre-harvest) in an agricultural year. Post-harvest refers to the immediate period after harvesting of a particular crop. The lean or pre-harvest indicates the immediate period before the harvest, while mid-period between these two pre and post-harvest periods is described as intermediate period in the present study.

6.2 Cropping Seasons

Two well defined cropping seasons exist throughout the district as in case of the whole state. The autumn or *kharif* crops are sown in the beginning of rainy season, i.e. June-July and are harvested in autumn (i.e. between October and November). A major portion of the annual production of rice and maize is grown in the *kharif* season. The *rabi* or spring crops are sown in autumn and harvested at the end of cold weather. Wheat, pulses, potato and onion are the *rabi* crops. However, the introduction of new technology in agriculture in Bihar has popularised the *Garma* and *Bhadai* crops. Following these two seasons, the agriculture year is now divided into four recognized agricultural seasons in the state for all kinds of crop. These are (a) *Aghani* (b) *Bhadai* (c) *Rabi* and (d) *Garma*. Orchard crops are included in the garma season after the name of the same season.

In case of rice, normal harvest time is October to November. But the produce comes to the market after a month or two and as such post-harvest effects are felt from December to March. In case of wheat, the post-harvest period continues from the month of April to July. In case of maize, there are two growing periods, July to September and October to December. But in the study area the major portion of maize is grown during October to December or in *kharif* season.

6.3 Price Structure of the Agricultural Commodities

During different periods of agricultural year, the price structure of six important crops namely rice, wheat, maize, pulses, potato and onion including both wholesale purchase price and wholesale sale price has been taken into consideration in the present study. The retail price however, has been taken into account only while discussing the different components of price spread in the marketing channels such as producer's share, margins of intermediaries and the marketing costs etc.

6.3.1 Wholesale Purchase and Wholesale Sale Prices

The wholesale purchase price refers to that price which the wholesalers/commission agents pay to the producer-sellers and other selling agencies. Since this is the price that mainly producer-sellers receive after selling their produce; this price is also treated as harvest price or farm price. Data on farm level price are relatively scanty and generally of poor quality. That is why all purchase price data used in this study represent harvest price and are collected from the sampled markets.

Whereas wholesale sale price is that price which the wholesale traders/ commission agents get for the sold commodities from their counterparts in the terminal markets. It also refers to that price which the retailers pay to the wholesalers/commission agents in the market. It, thus, expresses the relationship between two groups of traders; wholesalers/commission agents on the one hand and the retailers on the other.

6.3.2 Wholesale Purchase and Wholesale Sale Prices of Rice

Rice is harvested in October, but the produce comes in the market after one or two months and so the post-harvest transaction season of this crop starts from December and continues till April.

Therefore, the post-harvest period has been identified from December to April. The analysis of wholesale purchase price of rice during post-harvest period as evident from Table-6.1 reveals that the lowest price of rice is found in all the markets during this period. The average wholesale purchase price of rice for the district as a whole has been recorded as Rs 670.68 per quintal during post-harvest period. But it shows great spatial variation from market to market. Among the surveyed markets, the regulated markets have offered highest price. The rate of wholesale purchase price in both the regulated markets is found to be Rs 750 per quintal. Wholesale purchase price of rice varies between Rs 650 and Rs 700 per quintal among all the periodic markets. Araria Court and Jokihat markets have recorded a purchase price of Rs 700 per quintals, whereas Doriasonapur and Chanderdai periodic markets have commanded a purchase price of Rs 690 per quintal. These markets have recorded the purchase price of rice more than that of the district average. There are eight sampled markets in which the purchase price (wholesale purchase price) is found equal to the district average. These are Rampur Addi, Hanumanganj, Chiraiya, Koskapur, Ghurna, Khagrah, Tamganj and Saifganj markets recording Rs 670 per quintal. Remaining markets have shown lesser price of rice than the district average.

Similarly, average wholesale sale price of rice is found Rs 802.4 per quintal. The Table 6.1 shows that, maximum wholesale sale price is recorded in the regulated markets of Araria and Forbesganj, being Rs 850 per quintal, followed by Araria Court and Jokihat markets recording Rs 830 per quintal. Study finds that Khapra, Baghparasi, Lalokhur, Permanpur and Mohani periodic markets have recorded the sale price of rice at Rs 780 per quintal. Maina, Gangjahali, Dhagawan, Bahptia have recorded Rs 790 per quintal. Kamladorha and Khairkhan have sale price

of rice at Rs 800 per quintal. These all periodic markets have recorded a wholesale sale price below the district average. While remaining markets have recorded the sale price of rice above the district average.

Table-6.1
Seasonal Pattern of Price of Rice in Araria District (2002-2003)

S. N	Sampled Markets	Wholesale Purchase Price			Wholesale Sale Price		
		Post - harvest Period	Inter mediate Period	Lean Period	Post harvest Period	Inter mediate Period	Lean Period
Regulated markets							
1	Araria	750	895	1265	850	1060	1355
2	Forbesganj	750	895	1245	850	1060	1355
Periodic markets							
1	Araria Court	700	840	1205	830	1025	1345
2	Chanderdai	690	840	1205	820	1025	1335
3	Jamua	660	815	1175	800	995	1325
4	Jokihat	700	840	1205	830	1025	1345
5	Chakai	660	815	1175	800	995	1305
6	Chainpur	660	815	1175	800	995	1305
7	Amgachi	650	805	1165	780	975	1295
8	Bahptia	650	805	1165	790	985	1305
9	Dhagawan	650	805	1160	780	975	1295
10	Gangjahali	650	805	1165	790	985	1295
11	Khapra	650	805	1160	780	975	1295
12	Maina	660	805	1165	790	985	1305
13	Rampur Addi	670	825	1185	810	1005	1315
14	Hanumanganj	670	825	1185	810	1005	1315
15	Chiraiya	670	825	1185	810	1005	1315
16	Parmanpur	650	795	1160	780	975	1295
17	Mohani	650	795	1160	780	975	1295
18	Koskapur	670	825	1185	810	1005	1315
19	Ghurna	670	825	1185	810	1005	1315
20	Khagrah	670	825	1185	810	1005	1315
21	Tamganj	670	825	1185	810	1005	1315
22	Doriasonapur	690	835	1195	820	1015	1325
23	Saifganj	670	825	1185	810	1005	1315
24	Khairkhan	660	815	1175	800	995	1305
25	Kamladorha	660	815	1175	800	995	1305
26	Lalokhur	650	795	1160	780	975	1295
27	Baghparasi	650	795	1160	780	975	1295
District Average		**670.68**	**821.72**	**1182.58**	**802.4**	**998.44**	**1313.62**

Source: Field Survey 2002-2003 *(Unit in Rupee)*

The intermediate period starts from May and lasts till August. During this period, average wholesale purchase price of rice has been recorded Rs 821.72 per quintal with maximum Rs 895 per quintal in Araria and Forbesganj regulated markets. It is followed by Araria Court and Jokihat periodic markets at Rs 840 per quintal. While minimum wholesale purchase price of rice is being recorded in Permanpur, Mohani, Lalokhur and Baghparasi at Rs 795 per quintal. So far the average wholesale sale price of rice during intermediate period is concerned it is recorded Rs 998.44 per quintal for the district. It varies from market to market ranging between maximum Rs 1060 per quintal in Araria and Forbesganj regulated markets to minimum Rs 975 per quintal in Lalokhur and Baghparasi periodic markets.

During lean period the wholesale purchase price and wholesale sale price of rice appear to be highest for the whole agricultural year as revealed by survey. The district average of purchase price is Rs 1182.58. It ranges between Rs 1160 to Rs 1265 per quintal. In the regulated markets the purchase price is found higher than that of the periodic markets as in case of other seasons discussed earlier. Araria and Forbesganj regulated markets have recorded Rs 1265 and 1245 per quintal sale price of rice respectively during 2002-2003. While the price among the periodic markets varies from Rs 1160 to Rs 1195. Araria, Chanderdai, Jokihat, Rampur Addi, Hanumanganj, Chiraiya, Ghurna, Khagrah, Tamganj, Doriasonapur and Saifganj periodic markets have recorded the purchase price more than the district average price. In the remaining periodic markets, purchase price of rice is found to be lower than that of the district average. Moreover, during same period, average wholesale sale price of rice is recorded Rs 1313.62 per quintal with maximum wholesale sale price of Rs 1355 per quintal in Araria and

Forbesganj regulated markets. Minimum wholesale sale price of rice has been recorded at Lalokhur and Baghparasi periodic markets located in the northern side of the district.

6.3.3 Wholesale Purchase and Wholesale Sale Prices of Wheat

In case of wheat, the post-harvest situation of high arrival and consequent low price continues from April to July. During post-harvest period, average wholesale purchase price of wheat has been recorded Rs 513.27 per quintal in the year 2002-2003. Table 6.2 shows that maximum wholesale purchase price of wheat is recorded in Araria regulated markets worth of Rs 575 per quintal. Among the periodic markets highest wholesale purchase price is being recorded in Araria Court, Jokihat, and Chanderdai periodic markets because the urban and semi-urban nature of these markets provide largest number of consumers to the market hinterlands. While minimum price of Rs 485 per quintal has been found in Lalokhur and Baghparasi periodic markets. Similarly, average wholesale sale price of wheat is found to be Rs 576.72 per quintal. Maximum wholesale sale price is being recorded in Araria and Forbesganj regulated markets at Rs 645 per quintal. It is followed by Araria Court, Chanderdai, Jokihat, recording as Rs 585 per quintal as sale price of wheat. Minimum wholesale sale price of wheat is recorded Rs 570 per quintal in Lalokhur and Baghparasi periodic markets.

Intermediate period of wheat has been identified from August to November. During this period, average wholesale purchase price of wheat recorded for the district as a whole is Rs 600.37 per quintal. Maximum wholesale purchase price during this period has been recorded in Araria and Forbesganj regulated markets as Rs 625 per quintal. It is followed by Araria Court, Chanderdai and Jokihat markets

at Rs 605 per quintal. Minimum wholesale purchase price of Rs 590 per quintal is recorded in Lalokhur and Baghparasi, located in the extreme northern part of the district.

Table-6.2
Seasonal Pattern of Price of Wheat in Araria District (2002-2003)

S. N	Sampled Markets	Wholesale Purchase Price			Wholesale Sale Price		
		Post harvest Period	Inter mediate Period	Lean Period	Post harvest Period	Inter mediate Period	Lean Period
Regulated markets							
1	Araria	575	625	720	645	695	790
2	Forbesganj	570	625	720	645	695	785
Periodic markets							
1	Araria Court	535	605	720	585	665	765
2	Chanderdai	525	605	715	585	665	765
3	Jamua	520	603	710	575	660	760
4	Jokihat	525	605	715	585	665	765
5	Chakai	520	603	710	575	660	760
6	Chainpur	515	600	710	575	660	760
7	Amgachi	490	595	700	570	650	755
8	Bahptia	495	595	700	570	655	755
9	Dhagawan	485	590	695	570	645	745
10	Gangjahali	490	595	700	570	655	755
11	Khapra	485	590	695	570	660	745
12	Maina	500	600	705	575	660	755
13	Rampur Addi	525	603	713	580	660	760
14	Hanumanganj	520	603	713	580	640	760
15	Chiraiya	525	601	713	580	640	760
16	Parmanpur	475	585	693	565	660	740
17	Mohani	475	585	693	565	665	740
18	Koskapur	520	601	710	575	665	760
19	Ghurna	530	605	715	585	660	765
20	Khagrah	530	605	715	585	665	765
21	Tamganj	525	603	713	580	660	760
22	Doriasonapur	525	605	715	585	665	765
23	Saifganj	525	599	710	580	660	760
24	Khairkhan	505	600	705	575	660	760
25	Kamladorha	505	600	705	575	657	760
26	Lalokhur	485	590	699	570	650	750
27	Baghparasi	485	590	699	570	650	750
	Average	**513.27**	**600.37**	**707.79**	**576.72**	**658.17**	**757.58**

Source: Field Survey 2002-2003 *(Unit in Rupee)*

Similarly, during intermediate period average wholesale sale price for wheat is being recorded as Rs 658.17 per quintal. Maximum

wholesale sale price being recorded in Araria and Forbesganj regulated markets is Rs 695 per quintal. While minimum wholesale sale price of wheat has been recorded in Lalokhur and Baghparasi as Rs 650 per quintal.

Lean period is identified from December to March for wheat marketing. During this period both wholesale sale and purchase prices increase sharply because of low market arrival. During lean period average wholesale purchase price of wheat for district is recorded Rs 707.79 per quintal. During this period, maximum wholesale purchase price recorded in Araria and Forbesganj regulated markets and Araria Court periodic market is found to be Rs 720 per quintal. It is followed by Jokihat and Chanderdai periodic markets at Rs 715 per quintal. Minimum wholesale purchase price during lean period is recorded Rs 699 per quintal at Baghparasi and Lalokhur. Moreover, average wholesale sale price of wheat during lean period is found Rs 757.58 per quintal. Among the sampled markets maximum wholesale sale price is being recorded Rs 790 per quintal in Araria regulated market, followed by Forbesganj at Rs 785 per quintal, Araria Court, Chanderdai and Jokihat have recorded Rs 765 per quintal. Minimum wholesale sale price of wheat is recorded at Lalokhur and Baghparasi periodic markets as Rs 750 per quintal. (Table-6.2)

6.3.4 Wholesale Purchase and Wholesale Sale Prices of Maize

Maize is the third important food grain crop after rice and wheat which is produced and marketed in the study area. A major portion of the maize is grown during the *kharif* season and the post-harvest effects are recorded from October to January. During post-harvest period average wholesale purchase price for the maize is found Rs 454.04 per quintal. During this period, the difference between maximum purchase price and minimum purchase price of maize does not exceed more than

Rs 15 per quintal. Maximum wholesale purchase price Rs 460 per quintal is recorded in Araria and Forbesganj regulated markets. Similarly, Araria Court, Chanderdai, Jokihat and Doriasonapur periodic markets have recorded the same price i.e. Rs 460 per quintal. Whereas minimum wholesale purchase price of maize is recorded at Parmanpur and Mohani at the rate of Rs 445 per quintal. Similarly, average wholesale sale price of maize during post-harvest period is recorded Rs 524.76 per quintal with a variation, maximum being Rs 550 per quintal in Araria regulated market and minimum being recorded Rs 520 per quintal at Lalokhur, Baghparasi. Amgachi, Dhagawan, Permanpur and Mohani. Spatially the difference of maximum and minimum wholesale sale price of maize does not exceed more than Rs 30 per quintal of maize during post-harvest period.

Intermediate period of maize begins from February and ends in May. During this period, average wholesale purchase price is recorded Rs 502.61 with maximum of Rs 510 per quintal in Araria, Forbesganj regulated markets. It is followed by few urban and semi urban periodic markets with the same price. Minimum wholesale purchase price of maize during intermediate period is recorded at Parmanpur and Mohani as Rs 490 per quintal. Similarly, average wholesale sale price of maize during intermediate period is found Rs 583.09 per quintal. Table-6.3 shows that during intermediate period wholesale sale price of maize has been recorded as Rs 615 per quintal at Forbesganj and Araria regulated markets. It is followed by Araria Court, Chanderdai and Jokihat periodic markets, being urban and semi urban in nature. Moreover, lowest wholesale sale price of maize during intermediate period is recorded at Lalokhur and Baghparasi at the rate of Rs 580 per quintal.

Table-6.3
Seasonal Pattern of Price of Maize in Araria District (2002-2003)

S. N	Sampled Markets	Wholesale Purchase Price			Wholesale Sale Price		
		Post harvest Period	Inter mediate Period	Lean Period	Post harvest Period	Inter mediate Period	Lean Period
Regulated markets							
1	Araria	460	510	620	550	615	730
2	Forbesganj	460	510	620	545	615	730
Periodic markets							
1	Araria Court	460	510	580	530	590	710
2	Chanderdai	460	510	580	530	590	710
3	Jamua	455	505	575	525	585	700
4	Jokihat	460	510	580	530	590	710
5	Chakai	455	505	575	525	585	700
6	Chainpur	455	505	575	525	585	700
7	Amgachi	450	500	570	520	580	695
8	Bahptia	455	500	570	525	580	695
9	Dhagawan	450	495	565	520	575	690
10	Gangjahali	450	500	570	525	580	695
11	Khapra	450	495	565	520	575	690
12	Maina	455	500	570	525	580	695
13	Rampur Addi	-	-	-	-	-	-
14	Hanumanganj	-	-	-	-	-	-
15	Chiraiya	-	-	-	-	-	-
16	Parmanpur	445	490	565	520	575	685
17	Mohani	445	490	565	520	575	685
18	Koskapur	-	-	-	-	-	-
19	Ghurna	-	-	-	-	-	-
20	Khagrah	-	-	-	-	-	-
21	Tamganj	-	-	-	-	-	-
22	Doriasonapur	460	510	580	530	590	710
23	Saifganj	-	-	-	-	-	-
24	Khairkhan	455	505	575	525	585	700
25	Kamladorha	455	505	575	525	585	705
26	Lalokhur	450	500	570	520	580	695
27	Baghparasi	450	500	570	520	580	695
District Average		**454.04**	**502.61**	**576.90**	**524.76**	**583.09**	**699.28**

Source: Field Survey 2002-2003 *(Unit in Rupee)*

Low arrival and high price of maize has been recorded in lean or before harvest period. During this period average wholesale purchase price has been recorded as Rs 576.90 per quintal in Araria district. Maximum wholesale purchase price recorded at Araria and Forbesganj

regulated markets is Rs 620 per quintal. It is followed by Araria Court, Chanderdai and Jokihat periodic markets as Rs 580 per quintal. Lowest wholesale purchase prices of maize recorded at Parmanpur and Mohani is Rs 565 per quintal. In this period most of the periodic markets have recorded wholesale purchase price of maize below the district average. Similarly, average wholesale sale price of maize during lean period is found Rs 699.28 per quintal, with maximum sale prices being recorded at Araria and Forbesganj regulated markets as Rs 730 per quintal. It is followed by Araria Court, Jokihat, and Chanderdai markets as Rs 710 per quintal. Minimum wholesale sale price of maize has been recorded at Parmanpur and Mohani being Rs 685 per quintal.

6.3.5 Wholesale Purchase and Wholesale Sale Prices of Pulses

Pulses which include *gram, khesari*, and *masoor* are *rabi* crops. These pulses are sown in autumn and harvested at the end of cold weather. Average wholesale purchase price of pulses for the district during post- harvest period is recorded Rs 1769.13 per quintal. It varies spatially from market to market. Maximum purchase price of pulses is recorded at Forbesganj as Rs 1945 per quintal, followed by Araria regulated market as Rs 1935 per quintal. Maximum purchase price among the periodic markets is recorded at Araria Court, Jokihat and Chanderdai as Rs 1775 per quintal. And minimum wholesale purchase price as Rs 1745 per quintal is recorded in most of the markets located in the eastern and northern part of the district. Similarly, average wholesale sale price of pulses during post harvest period is recorded Rs 1935.51 per quintal. Market-wise maximum wholesale sale price of pulses is recorded at Araria and Forbesganj regulated markets as Rs 2125 per quintal. Among the periodic markets maximum wholesale sale price of Rs 1950 per quintal is recorded in Araria Court, Chanderdai, Jokihat, Rampur Addi, Koskapur, Ghurna, Khagrah, Tamganj,

Doriasonapur and Saifganj. While minimum sale price of pulses is recorded at Permanpur, Dhagawan and Mohani as Rs 1935 per quintal.

Table-6.4
Seasonal Pattern of Price of Pulses in Araria District (2002-2003)

S. N	Sampled Markets	Wholesale Purchase Price			Wholesale Sale Price		
		Post harvest Period	Inter mediate Period	Lean Period	Post harvest Period	Inter mediate Period	Lean Period
Regulated markets							
1	Araria	1935	2025	2135	2125	2240	2375
2	Forbesganj	1945	2035	2125	2125	2235	2375
Periodic markets							
1	Araria Court	1775	1975	2135	1950	2150	2375
2	Chanderdai	1775	1975	2135	1950	2150	2375
3	Jamua	1755	1965	2125	1940	2130	2365
4	Jokihat	1775	1975	2135	1950	2150	2375
5	Chakai	1755	1965	2125	1940	2130	2365
6	Chainpur	1755	1965	2125	1940	2130	2365
7	Amgachi	1745	1965	2125	1940	2130	2365
8	Bahptia	1745	1965	2125	1940	2130	2365
9	Dhagawan	1745	1965	2125	1935	2120	2360
10	Gangjahali	1745	1965	2125	1940	2130	2360
11	Khapra	1745	1965	2125	1935	2130	2360
12	Maina	1745	1965	2125	1940	2130	2365
13	Rampur Addi	1765	1970	2125	1950	2150	2375
14	Hanumanganj	1765	1970	2125	1950	2150	2375
15	Chiraiya	1765	1970	2125	1950	2150	2375
16	Parmanpur	1745	1965	2125	1935	2120	2360
17	Mohani	1745	1965	2125	1935	2120	2360
18	Koskapur	1765	1970	2125	1950	2150	2370
19	Ghurna	1765	1970	2125	1950	2150	2375
20	Khagrah	1765	1970	2125	1950	2150	2375
21	Tamganj	1765	1970	2125	1950	2150	2375
22	Doriasonapur	1775	1975	2135	1950	2150	2375
23	Saifganj	1765	1970	2125	1950	2150	2370
24	Khairkhan	1745	1965	2125	1940	2150	2365
25	Kamladorha	1745	1965	2125	1940	2130	2365
26	Lalokhur	1745	1965	2125	1940	2130	2365
27	Baghparasi	1745	1965	2125	1940	2130	2365
	Average	**1769.13**	**1972.24**	**2126.72**	**1935.51**	**2145.34**	**2368.62**

Source Field Survey 2002-2003 *(Unit in Rupee)*

During intermediate period, average wholesale purchase price of pulses is found Rs 1972.24 per quintal. Maximum purchase price is

found Rs 2035 per quintal at Forbesganj regulated market. As far as the periodic markets are concerned maximum purchase price of pulses is recorded at Araria Court, Jokihat, Chanderdai, and Doriasonapur as Rs 1975 per quintal, while remaining periodic markets have recorded below the district average purchase price ranging between a maximum of Rs 1970 per quintal to minimum of Rs 1965 per quintal. Similarly, average wholesale sale price of pulses of the district is recorded Rs 2145.34 per quintal with maximum to minimum variation from Rs 2240 per quintal in Araria regulated market to Rs 2120 per quintal in Parmanpur and Mohani.

Moreover, during lean period average purchase price of pulses is found Rs 2126.72 per quintal for the district as a whole. Maximum purchase price of pulses is recorded Rs 2135 per quintal in Araria regulated market. Maximum purchase price during this period in periodic markets is recorded at Araria Court, Chanderdai, Jokihat, and Doriasonapur as Rs 2135 per quintal. Whereas, remaining periodic markets have recorded Rs 2125 per quintal less than the district average. Average wholesale sale price of pulses during lean period is found Rs 2368.62 per quintal for the district as a whole. Maximum sale price of Rs 2375 per quintal is recorded at Araria and Forbesganj. The same sale price during this period in periodic markets is recorded at Araria Court, Chanderdai, Jokihat, Rampur Addi, Hanumanganj, Chiraiya, Ghurna, Khagrah, Tamganj and Doriasonapur as Rs 2375 per quintal. Whereas the prices for remaining periodic markets lie below this.

6.3.6 Wholesale Purchase and Wholesale Sale Prices of Potato

Potato is *rabi* crop, and one of the important crops grown and marketed in the district. Average purchase price of potato during post-harvest period is recorded Rs 171.55 per quintal. Maximum purchase price of potato recorded at Forbesganj regulated markets is Rs 210 per

quintal, followed by Araria regulated market at Rs 200 per quintal. Among periodic markets, the urban/semi urban periodic markets have fetched highest purchase price of potato at Rs 175 per quintal in Araria Court, Chanderdai, Jokihat and Doriasonapur. These periodic markets are having larger catchments area, attracting larger number of sellers and purchasers. That is why in these markets wholesale purchase price is higher, while the price in the remaining periodic markets varies between a maximum of Rs 170 per quintal to Rs 165 per quintal. Similarly, average wholesale sale price of potato during post-harvest period is found Rs 243.79 per quintal. Maximum sale price is recorded in Araria, Forbesganj regulated markets. Periodic markets like Araria Court, Chanderdai, Jokihat, Amgachi, Rampur Addi, Hanumanganj, Ghurna, Khagrah, Tamganj; Doriasonapur have recorded Rs 250 per quintal. Remaining markets have recorded below district average ranging between Rs 240 to Rs 235 per quintal.

During intermediate period average purchase price of potato is found Rs 277.75 per quintal with maximum Rs 300 per quintal in Araria and Forbesganj Regulated markets. Among the periodic markets maximum purchase price of potato is recorded at urban / semi-urban and markets which are well connected with roads and transport system. They include Araria Court, Chanderdai, Jokihat and Doriasonapur, recording a price of Rs 245 per quintal. Minimum purchase price is recorded at Dhagawan, Khapra, Parmanpur, and Mohani being Rs 220 per quintal. Similarly, average wholesale sale price of potato is found to be Rs 359.48 per quintal. During this period most of the markets have recorded of sale Rs 370 per quintal. It includes Araria, Forbesganj regulated markets. Among the periodic markets, Araria Court, Chanderdai, and Jokihat are included, which are located in the central and eastern part of the district. These parts of the district are well

connected with roads and other transport facilities. Ghurna, Tamganj, Khagrah and Doriasonapur have recorded same sale price of Rs 370 per quintal.

Table-6.5
Seasonal Pattern of Price of Potato in Araria District (2002-2003)

S. N	Sampled Markets	Wholesale Purchase Price			Wholesale Sale Price		
		Post-harvest Period	Inter mediate Period	Lean Period	Post-harvest Period	Inter mediate Period	Lean Period
Regulated markets							
1	Araria	200	300	550	250	370	630
2	Forbesganj	210	300	550	250	370	630
Periodic markets							
1	Araria Court	175	245	445	250	370	630
2	Chanderdai	175	245	445	250	370	628
3	Jamua	170	235	440	240	360	615
4	Jokihat	175	245	445	250	370	625
5	Chakai	170	235	440	240	360	615
6	Chainpur	170	235	440	240	360	615
7	Amgachi	165	225	438	250	350	610
8	Bahptia	170	225	437	240	350	610
9	Dhagawan	165	220	435	235	345	608
10	Gangjahali	165	225	437	240	350	610
11	Khapra	165	220	435	235	345	610
12	Maina	170	225	437	240	350	610
13	Rampur Addi	170	240	443	250	365	620
14	Hanumanganj	170	240	443	250	365	620
15	Chiraiya	170	240	443	250	365	620
16	Parmanpur	165	220	435	235	340	600
17	Mohani	165	220	435	235	340	600
18	Koskapur	170	240	443	240	365	620
19	Ghurna	170	240	443	250	370	620
20	Khagrah	170	240	443	250	370	620
21	Tamganj	170	240	445	250	370	620
22	Doriasonapur	175	245	445	250	370	625
23	Saifganj	170	240	443	240	365	620
24	Khairkhan	170	235	440	240	360	615
25	Kamladorha	165	225	435	240	360	615
26	Lalokhur	165	225	435	240	350	605
27	Baghparasi	165	225	435	240	350	605
District Average		**171.55**	**277.75**	**447.58**	**243.79**	**359.48**	**616.24**

Source Field Survey 2002-2003 *(Unit in Rupee)*

Moreover, during lean period average purchase price of potato is found Rs 447.58 per quintal with maximum Rs 550 per quintal at Araria

and Forbesganj regulated markets. Among the periodic markets, Araria Court, Chanderdai, Jokihat, Doriasonapur and Tamganj have recorded the highest purchase price of Rs 445 per quintal, while minimum purchase price of Rs 435 per quintal is being recorded at Baghparasi, Lalokhur, Kamladorha, Mohani and Khapra. Similarly, during lean period average sale price of potato recorded is found Rs 616.24 per quintal. Maximum sale price recorded at Araria and Forbesganj is Rs 630 per quintal, followed by few periodic markets with same sale price of potato. While minimum price of Rs 600 per quintal is recorded at Parmanpur and Mohani. The difference of maximum and minimum sale price of potato during lean period does not exceed more than Rs 30. This shows that markets are very much spatially integrated. (Table-6.5)

6.3.7 Wholesale Purchase and Wholesale Sale Prices of Onion

Onion is one of the important crops which are produced and marketed in the district. Average purchase price of onion during post-harvest period is recorded Rs 227.41 per quintal for the district. But it varies from maximum Rs 310 to minimum Rs 215 per quintal. The highest purchase price of potato as Rs 310 per quintal is recorded in Araria followed by Forbesganj regulated market. Among the sampled periodic markets maximum wholesale purchase price of Rs 235 per quintal is recorded at Araria Court, and Jokihat. They are followed by Chanderdai and Doriasonapur at Rs 230 per quintal. All the remaining markets have recorded below the district average. Similarly, average wholesale sale price of onion is recorded as Rs 352.93 per quintal for the district, with maximum of Rs 370 per quintal in Araria and Forbesganj regulated markets and minimum of Rs 345 per quintal in Lalokhur, Baghparasi, Parmanpur, Mohani and Dhagawan.

Table-6.6

Seasonal Pattern of Price of Onion in Araria District (2002-2003)

S. N	Sampled Markets	Wholesale Purchase Price			Wholesale Sale Price		
		Post - harvest Period	Inter mediate Period	Lean Period	Post - harvest Period	Inter mediate Period	Lean Period
Regulated markets							
1	Araria	310	370	645	370	460	770
2	Forbesganj	300	375	650	370	460	770
Periodic markets							
1	Araria Court	235	375	525	370	460	770
2	Chanderdai	230	370	515	365	450	765
3	Jamua	220	365	505	355	440	745
4	Jokihat	235	375	525	370	460	770
5	Chakai	220	365	505	355	440	745
6	Chainpur	220	365	505	355	440	745
7	Amgachi	215	360	500	350	435	740
8	Bahptia	215	360	500	350	435	740
9	Dhagawan	215	360	500	245	435	740
10	Gangjahali	215	360	500	350	435	740
11	Khapra	215	360	500	345	435	740
12	Maina	220	360	500	350	435	745
13	Rampur Addi	225	367	500	360	445	750
14	Hanumanganj	225	367	510	360	445	750
15	Chiraiya	225	367	510	360	445	750
16	Parmanpur	215	360	510	345	435	740
17	Mohani	215	360	500	345	435	740
18	Koskapur	225	360	500	360	435	740
19	Ghurna	225	367	510	360	445	750
20	Khagrah	225	367	510	360	445	750
21	Tamganj	225	367	510	360	445	750
22	Doriasonapur	230	370	515	365	450	760
23	Saifganj	225	367	510	360	445	750
24	Khairkhan	220	365	505	355	440	745
25	Kamladorha	220	365	505	355	440	745
26	Lalokhur	215	360	500	345	435	740
27	Baghparasi	215	360	500	345	435	740
District Average		**227.41**	**365.13**	**516.20**	**352.93**	**442.75**	**749.13**

Source: Field Survey 2002-2003 *(Unit in Rupee)*

However, during intermediate period average purchase price of Rs 365.13 per quintal is recorded for the district with maximum of Rs 375 per quintal at Forbesganj regulated market. Araria Court and Jokihat urban periodic markets have recorded same purchase price of

onion. While minimum purchase price recorded in most of the periodic markets is Rs 360 per quintal. Similarly, average sale price during intermediate period is found Rs 442.75 per quintal. Maximum sale price recorded at Araria and Forbesganj regulated markets is Rs 460 per quintal. Among the periodic markets, Araria Court and Jokihat periodic markets have recorded the same sale price. Market-wise the difference between maximum and minimum sale price does not exceed more than Rs 25 per quintal.

Moreover, during lean period average purchase price of onion is recorded as Rs 516.20 per quintal. In this period maximum purchase price of Rs 650 is being recorded at Forbesganj regulated market. Among the periodic markets Araria Court and Jokihat periodic markets have recorded maximum purchase price of onion at Rs 525 per quintal. Remaining periodic markets have recorded below the district average. Similarly, average sale price of onion during lean period has been Rs 749.13 per quintal in which maximum sale price of Rs 770 per quintal is being recorded at Araria and Forbesganj regulated markets, Araria Court and Jokihat periodic markets at Rs 770 per quintal. While price of onion at remaining periodic markets varies between Rs 765 per quintal at Chanderdai to Rs 740 per quintal at Baghparasi, Lalokhur, Koskapur, Mohani, Permanpur, Khapra, Gangjahali, Dhagawan, Bahptia. and Amgachi.

From the above discussion it is found that there is a wide difference in the wholesale purchase and wholesale sale prices of selected agricultural commodities during post-harvest and lean periods. It is due to seasonal character of the production patterns of these agricultural commodities, while their consumption is more or less uniform over different months of the year. It leads to seasonal fluctuations in their prices. Crop-wise study shows wide fluctuations in

the prices of these commodities. As far as rice is concerned maximum seasonal variation is up to 76.32 and 63.71 per cent in wholesale purchase and wholesale sale prices between post-harvest period and lean period. For wheat, maize and pulses the maximum seasonal variations in wholesale purchase price between post-harvest and lean period are 37.89 per cent, 27.05 per cent and 20.21 per cent respectively. On the other hand, the maximum seasonal variations in wholesale sale price between these two periods for wheat, maize and pulses are 31.36 per cent, 33.25 per cent, 22.37 per cent respectively. Maximum seasonal variations in wholesale purchase and wholesale sale prices between post-harvest and lean periods for potato and onion have been recorded 161 per cent, 126.76 per cent and 152.77 per cent. 112.26 per cent respectively. Potato and onion have recorded maximum seasonal variations in their prices because of being commercial crops and their perishable nature. Being commercial crop their prices are totally governed by market forces without any government intervention. causing high fluctuations.

The seasonal behaviour of the wholesale purchase price over the space constitutes the most important indicator of the efficiency of marketing system. There is not much markets-wise spatial variation in the prices. Spatial patterns of price structure of different crops show that regulated and urban periodic markets are having better price structure of the selected agricultural commodities than the smaller and inaccessible periodic market centers. Location and size of market centers play a decisive role in determining the price structure of different agricultural commodities. The result shows that spatial variations of minimum and maximum prices are found not very high both in regulated and periodic markets. It shows that these market centers are vary much spatially integrated. While the seasonal variation

is more pronounced in the markets of Araria district. This supports the finding that seasonal price fluctuation is more pronounced in an agriculturally backward area.

6.4 Marketing Costs of the Agricultural Commodities

The role of marketing is to move the goods from the producer to consumer which involves various types of costs. The focal point of interest, in this section is these marketing costs. The costs of marketing are the expenses required in bringing goods and services from producer to the consumer[1].These costs normally include handling charges at farm level, assembling charges, storage charges, wholesaling and retailing charges applied on customers. Sometimes, it becomes very difficult to separate the costs of marketing from the marketing margins. As such, marketing costs and margins are defined as the difference between the ultimate price paid by the consumer for a commodity or product and the price received by the farmer or a primary producer.

Study of marketing costs and margins is one of the most popular issues, undertaken by the marketing sections of government in the region. But only a limited use is made of these studies and seldom they are updated. Though marked changes have taken place in the marketing system, production areas and production techniques. Furthermore, it is a general belief in India that the costs of marketing of agro-commodities are high. Various studies have shown that intermediaries take away the considerable portion of the payment made by the consumers for the agricultural produce[2]. Little attempt is made to identify and analyze the nature of costs of marketing and their implications in the context of the imperfections of agricultural marketing.

---

1 Larson, A.L. (1957), *Agricultural Marketing,* Prentice Hall of India, Inc, p.379.

2 Cohen,R L (1958), *The Economics of Agriculture*, Cambridge, p-98

The study of marketing costs and margins is essential for the formulation of an appropriate price policy. Besides, this also helps to ascertain as to what extent the intermediaries intervene between the producer and consumer and what profit they get for such services. And further it helps to examine whether such services are necessary, and if they are getting costlier etc. Suodgrass *et al* (1982) in their studies have estimated that the farmers have received only one third of the retail price of the foodgrain[1]. Such studies are useful in ascertaining the functions performed by some of the intermediaries/agencies employed and the costs involved. It helps in coming to the conclusion as to how best such integration at different levels of marketing channel could be brought about. It is a common experience that the marketing of agricultural produce is more expensive than marketing of manufacturing goods on account of certain peculiar features of agricultural products. It has also been noticed that the farmers often borrow funds for cultivation and other expenses and sell their crops in advance to financier who is also a merchant. Thus, farmers, particularly small and marginal, sell their crops much ahead of the harvest to the merchants from whom they derive their finance. Most of these merchants are agents and brokers in the primary markets. Thus they have an assured crop-year and assurance of marketing. When there are a number of such agencies operating in a market, however, small their turnover of business may be, they are difficult to be ousted by more efficient intermediaries doing business on a large scale.

Similarly, the number of retailers of food grains is unnecessarily large. In both the cases, it is obvious that if there are fewer number of intermediaries working with a greater degree of efficiency and a greater

---

1 Suodgrass, M. M, and Wallace, L.T. (1982), *Agriculture Economics and Resource Management*, Prentice Hall of India, p.125.

volume of turnover in business, the costs of marketing is likely to be lower. Similarly, the wholesalers of agricultural produce exact a disproportionate price for their services. The presence of such a large number of market agencies results in an increased marketing costs. There is no gain saying the fact that in the countries like India where the marketing of agricultural commodities is not at all properly organized, a number of other factors are also responsible for the higher costs of marketing. The most important factors are (a) poor storage facilities, (b) inadequate transportation and communication facilities, (c) lack of facilities for grading and standardization (d) inadequate and higher priced finance for marketing of crops, and (e) low degree of competitiveness among the intermediaries.

From the above analysis, it is apparent that the factors responsible for high costs of marketing are too many and these make the agricultural marketing system highly imperfect in nature. Under highly competitive conditions consumer will get agro-commodities at near the level of costs of production. Under monopolistic condition, however, this will probably not be true, because of monopolistic profits, failure to adopt efficient practices and failure to provide goods and services most required.

Data on marketing costs have been collected from farmers and different market functionaries, operating in sampled markets of Araria District, viz; village merchants, itinerant traders etc. regarding marketing expenses incurred by them and their purchase and sale prices of the commodities.

6.4.1 Market Charges

The details of market charges of different produces have been reduced for the sake of comparison to a uniform level, viz. charges incurred per hundred rupees worth of produce, and are shown in Tables-

6.7 and 6.8. It is found that there is no relation between the charges of one market and those of another. Market charges vary among regulated and periodic markets depending upon their location and volume of arrival and transaction. These charges also differ in terms of their payment by the seller in one situation and by the buyer in the other. In regulated markets *Katcha arhatiyas* or commission agents also incur expenditure on certain items, e.g. *gaddi* expenditure, weighing, etc, all of which have to be ultimately recovered either from sellers or buyers according to the local custom. There is also no uniformity or generally recognized rule as to which charges should be borne by the sellers and which by the buyers. As a result, though total market charges do not differ much from one market to another, the payments made by sellers and buyers differ quite largely.

6.4.2 Transportation Cost

Transportation cost is major cost borne by the farmers. This cost is to be paid by him to bring his produce from his village to the market place. Table- 6.7 shows the transportation cost paid by the farmers in different market area. This information is obtained from the farmers of the sampled study area. The data have details of the transportation cost paid by respective groups of farmers having different size of landholding i.e. marginal, small and large, in the regulated and periodic markets.

It can be seen from the table that the big farmer with largest size of land holding is paying on an average Rs 7.62 per quintal with maximum Rs 9.5 per quintal in Araria regulated and Saifganj periodic markets and minimum Rs 5 per quintal in Baghparasi, Mohani and Permanpur. Similarly, average transportation cost paid by small farmers is an average Rs 10.27 per quintal for the district as a whole. Maximum transportation cost is paid in the Araria and Forbesganj regulated

markets being Rs 12 per quintal and minimum transportation cost Rs 8 per quintal in many periodic market centers of the district.

Table-6.7
Pattern of Transport Cost paid by Farmers /Sellers in Araria District (2002-2003)

S N	Sampled Markets	Big Farmers (Above 4 acres of Landholding)	Small Farmers (2-4 acres of Landholding)	Marginal Farmers (Below 2 acres of Landholding)
Regulated markets				
1	Araria	9.5	12	14.20
2	Forbesganj	8.5	12	13
Periodic markets				
1	**Araria**	8	10	12
2	Chanderdai	7	10	12
3	Jamua	7	9	10
4	Jokihat	8	10	12.20
5	Chakai	6.5	10	11.5
6	Chainpur	7	11	12.5
7	Amgachi	6.5	9	11
8	Bahptia	7	9	10.5
9	Dhagawan	6	8	10
10	Gangjahali	6.5	9	11
11	Khapra	6	8	10
12	Maina	7	8	10
13	Rampur Addi	7	10	11
14	Hanumanganj	8.5	11	12
15	Chiraiya	8.5	11	12
16	Parmanpur	5	8	10
17	Mohani	5	8	10
18	Koskapur	8.5	11	12
19	Ghurna	9	12	13
20	Khagrah	9	12	13
21	Tamganj	9	12	14
22	Doriasonapur	9	12	14
23	Saifganj	9.5	12	14
24	Khairkhan	7.4	9	10
25	Kamladorha	7.4	9	10
26	Lalokhur	5.5	8	9.5
27	Baghparasi	5	8	9.5
District Average		**7.62**	**10.27**	**11.91**

Source: Field Survey 2002-2003 *(Unit, Rupees per quintal)*

Moreover, the average transportation cost paid by marginal farmers is quite high at Rs 11.91 per quintal, maximum being Rs 14.20

per quintal in Araria regulated market. While minimum transportation cost of Rs 9.5 per quintal is reported in Baghparasi and Lalokhur periodic market centers. Variation in the transportation cost in different categories of the farmer i.e. marginal, small and big is due to variations in market area and mode of transportation.

However, it can be seen from this table that transportation cost per quintal borne by big farmers is less as compared to that borne by the marginal and small farmers. The reason for this difference might be due to the fact that marginal and small farmers have a small quantity of produce to be transported to the market and the minimum transportation charges might be fixed per trip. Alternatively speaking, the trip of large cart/van has some excess capacity and therefore per quintal transport cost of a small and marginal farmer is higher than that of paid by a big farmer. The big farmer on the other hand has enough quantity to be transported in one trip of a large cart/van reducing his transportation cost[1]. All the other charges like market fee, commission charges, *tulai* is paid by traders except handling which is born by both buyers and sellers. The nature and amount of market charges vary form market to market.

6.4.3 Market Fee

Market fee is that charge which is borne by the buyer and the seller in the regulated and periodic markets but its nomenclature varies in regulated markets and periodic markets. Generally, in regulated markets it is called as market fee/market tax, while in periodic markets it is locally called *batti*. The average market charge for the district as a whole is Rs 3.22 per 100 rupees, but it varies in regulated and periodic markets. In regulated markets it is fixed Rs 1 per 100 rupees, while in

---

[1] Arya,A.(1993), *Agricultural Marketing in Gujarat*, Concept Publishing Company, New Delhi P.95

periodic markets it varies in nature and amount from maximum Rs 4.75 in Araria Court periodic market to minimum Rs 3 in the various markets of northern and western part of the district.

Table-6.8
Pattern of Marketing Costs Paid by Sellers/Farmers and Purchasers in Araria District (2002-2003)

S. N	Sampled Markets	Types of Marketing Costs			
		Market Fee	Commission	Brokerage	Handling Costs Rs/Per quintal
Regulated markets			**Per 100 Rupees**		
1	Araria	1	1.50	0.25	1.5
2	Forbesganj	1	1.50	0.25	1.5
Periodic markets					
1	Araria Court	4.75	-	0.50	2.50
2	Chanderdai	4.25	-	0.50	2.50
3	Jamua	3.25	-	0.25	2
4	Jokihat	3.75	-	0.50	2.5
5	Chakai	4	-	0.25	2
6	Chainpur	4	-	0.25	2
7	Amgachi	3.25	-	0.25	2
8	Bahptia	3.25	-	0.25	2
9	Dhagawan	3.25	-	0.25	2
10	Gangjahali	3.25	-	0.25	2
11	Khapra	3.25	-	0.25	2
12	Maina	3	-	0.25	2
13	Rampur Addi	3	-	0.25	2
14	Hanumanganj	3	-	0.25	2
15	Chiraiya	3	-	0.25	2
16	Parmanpur	3	-	0.25	2
17	Mohani	3	-	0.25	2
18	Koskapur	3.5	-	0.25	2
19	Ghurna	3.5	-	0.25	2
20	Khagrah	3.5	-	0.25	2
21	Tamganj	3.5	-	0.25	2
22	Doriasonapur	4	-	0.50	2.5
23	Saifganj	3	-	0.25	2
24	Khairkhan	3	-	0.25	2
25	Kamladorha	3	-	0.25	2
26	Lalokhur	3	-	0.25	2
27	Baghparasi	3	-	0.25	2
	Average	**3.22**	**1.50**	**0.28**	**2.03**

Source: Field Survey 2002-2003 *(Unit in Rupee)*

6.4.4 Commission (Arhat)

This is the *Arhatiya's* remuneration paid by the buyer and the seller both. Whenever commission is levied on the buyer, it may be termed *arhat*. This is almost invariably payable in cash. However, in some markets of other states in the country, *arhat* always includes weighmen charges .The charges of weighmen and brokerage are always separated from *arhat* or commission charges. Commission / *arhat* in both the regulated markets i.e. Araria and Forbesganj is Rs 1.50 per 100 rupees. It is paid by the sellers and buyers jointly in regulated markets. while in periodic markets no arhatiya is found.

6.4.5 Brokerage *(Dalali)*

The *dalal* assists the *arhatiya* in bringing together sellers and buyers and arranging the sale of produce in regulated markets. Similarly he is involved in arranging the price in a periodic market. After setting up of market yard, the amount of brokerage is fixed at the rate of 0.25 per cent and it is paid by buyers. Moreover, in periodic markets, there is no maximum limit to it. It is found from the survey that it varies up to a maximum of 0.50 per cent in Araria Court, Jokihat, Chanderdai and Doriasonapur. All these markets are of urban and semi-urban character, while remaining periodic markets have reported *dalali* of Rs 0.25 between buyers and sellers. *Dalali* is paid by both the buyer and seller in periodic market.

6.4.6 Handling Costs

The costs of handling normally comprise of wages paid to labourers, weighing charges and cartage to the buyer's godowm/vehicle. For the sake of convenience these costs are treated under two heads, (a) handling including the weighment stage (b) from weighment stage up to the buyer's vehicle or godown including cartage.

Under first head, the usual items are unloading the cart, dressing the produce, sieving and cleaning and weighing done in the regulated markets. Remuneration of these services is generally paid both in cash and kind by sellers. At the farm level where the produce is sold by the farmers to village merchants and itinerant dealers, the charges for weighment and cleaning are paid by the producer-sellers. However, the buyers pay the handling charges on the basis of either per quintal or per *bora* at the rate of Rs 1.5 per quintal in Araria and Forbesganj regulated markets. While among the periodic markets maximum handling charges are paid at the rate of Rs 2.50 per quintal in Araria Court, Chanderdai, Jokihat, and Doriasonapur. And remaining markets have reported Rs 2 per quintal as handling charges.

From the above analysis it is found that the costs of marketing are lower in regulated markets than the periodic markets. However, among the periodic markets the urban periodic markets are having higher costs than that of rural periodic markets.

6.5 Price Spread of the Agricultural Commodities

The price spread refers to the difference between the ultimate price paid by consumer and the price received by the producer for an equivalent quantity of farm product. The price spread consists of marketing costs and margins of the intermediaries which ultimately determine the overall effectiveness of the marketing system. If goods could be moved from producers to ultimate consumers at the minimum cost along with provisions of basic services and consideration of consumer's choice, the marketing system is considered to be efficient. Reduction in the costs of performance of various marketing functions and improving the standard of services at same or lower costs represents a case of marketing efficiency.

The knowledge of price spread between the producers' price and consumer's price is important for producers and consumers. The costs incurred and margins of intermediaries in the marketing of each commodity influence the price that the producer gets as well as the price which consumer pays for it.

The study of price spread is complicated because of the wide variations in the channels of the agricultural marketing and also the conditions under which agricultural commodities are marketed. Thus depending upon the channels through which the commodities enter the markets, the producer sellers will get varying returns for their produces. Further, price spread varies considerably according to the nature and location of the market.

Market charges paid by the producer for his produce are likely to be higher in unregulated markets than the regulated markets. The mode of sale, weighmen facilities etc, as present in different markets would also influence the producer's share in the consumer's price differently. The costs of marketing vary widely, spatially and temporally both, depending upon the distances involved and services performed. Absence of perfect grading and standardization of agricultural commodities add to difficulties in conducting the study of price spread of agro-commodities. In the absence of relevant records to be maintained by the traders' associations, commercial or state organizations, it becomes quite difficult to have an exact idea about the share obtained by each type of intermediary involved. However, an attempt has been made in this section to determine the costs and margins and the resultant price-spread of important crops.

There are two methods through which price spread can be determined, i.e. the 'concurrent margin' and the 'lagged margin'. Both the concurrent margin and lagged margin methods are used in deriving

the marketing margin. The difference between price paid by ultimate consumer and the price received by the producer is found by taking account of cost of assembling, processing, storage, transportation and handling charges in moving the produce from the farmer to the ultimate consumer. Concurrent margin refers to the difference between the prices prevailing at successive stages of marketing on the same date, while lagged margin is the difference between the price of farm produce obtainable at a particular stage of marketing and the price paid for it at the preceding stage of marketing during an earlier period, the length of time between the two dates being the average period for which the marketing agency holds the products. Concurrent margin does not take into account the time that elapses between purchase and the sale of produce by the same party either due to procuring or stock-holding for price consideration. Lagged margin takes into account the time that elapses between purchase and sale by a party and for that matter between sale by the farmer and purchase by the consumer, and, thus. allows for the choice of time which the traders exercise while carrying out his business.

In the present analysis the price spread has been estimated by comparing the price at different levels of marketing with the help of method of concurrent margin. For determining the margins of various intermediaries, difference between prevailing prices on the same day at successive stages of marketing are worked out. The differences so obtained at various stages of marketing provide information on gross margin at each stage. From these gross margins those costs of marketing and processing which are incurred by the intermediaries concerned are subtracted and the balance gives an idea of the margin of profit or loss for the traders. For the purpose of calculation of costs of marketing at

different stages the actual rates of charges in kind are converted in term of rupee value.

The method adopted in the collection of data was to approach the producer-sellers themselves when they visited the market yard to sell their produce, and from the various intermediaries to whom they sold and also all other possible sources of information available in the market. Besides, the information collected in one visit has verified during the successive visits. Further, since there is no uniform channel in the marketing of the agro-commodities and the costs of marketing and margins vary from commodity to commodity and according to the number of intermediaries involved, it is presumed and generally found true that the retailers' price represents the price paid by ultimate consumers. Thus, in this study, the retailers' price is considered as representative of consumers' price.

6.5.1 Producer's Share in Consumer's Price

In the study of price spread of agricultural commodities, attention is usually focussed on the producer's share in the consumer's price. In an elementary sense, the producer receives what the consumer pays for the agricultural products after subtracting various costs of marketing incurred at different levels of the market channel. The details of the 'break-up of the consumer's price' i.e. gross margins or price spread in case of rice wheat, maize, pulses, potato and onion in the market of Araria Court is given in Table-6.9. It may be mentioned here that the comparison of price spread of the agricultural commodities in regulated and periodic markets has been made. It is hypothesized that the price spread incurred by the producer for a marketed produce is likely to be higher in the unregulated market than in regulated market. It is further hypothesized that because of the setting up of market yard under the regulatory provisions, the producer's share in the consumer's price has

increased and as a consequence the wholesaler's and retailer's margins including costs of marketing are reduced. In view of this, the producer's share in the regulated marketing yard is higher than the periodic markets.

Table-6.9
Producer's Share and Marketing Margins of Important Crops in the Markets of Araria District (2002-2003)

SN	Commodities	Producer's Share	Wholesaler's Margin	Retailer's Margin	Costs of Marketing	Consumer's Price
Regulated Markets						
1	Rice	78.89	7.93	2.77	10.41	100.00
2	Wheat	79.44	6.61	2.90	11.05	100.00
3	Maize	72.17	12.11	4.88	10.84	100.00
4	Pulses	81.78	5.74	2.50	9.97	100.00
5	Potato	69.03	11.21	8.20	11.56	100.00
6	Onion	70.07	14.24	4.61	11.08	100.00
Periodic Markets						
1	Rice	76.07	10.37	1.71	11.85	100.00
2	Wheat	79.63	4.83	2.83	12.71	100.00
3	Maize	71.82	10.71	5.28	12.25	100.00
4	Pulses	80.25	5.44	2.72	11.59	100.00
5	Potato	57.25	24.72	6.02	12.00	100.00
6	Onion	59.92	23.51	4.90	11.67	100.00

Source Field Survey 2002-2003 *(Unit in Percent)*

Table- 6.9 shows that the producer's share in the consumer's price of different agricultural commodities in regulated markets is 78.89 per cent in rice, 79.44 per cent in wheat, 72.17 per cent in maize, 81.78 per cent in pulses, 69.03 per cent in potato and 70.07 per cent in onion. While in periodic markets it is 76.07 per cent in rice, 79.63 per cent in wheat, 71.82 per cent in maize, 80.25 per cent in pulses, 57.25 per cent in potato and a minimum of 59.92 per cent in onion. This indicates that the producer's share is higher in regulated markets. The reason is the introduction of regulatory measures after the construction of regulated market yard and improvement in marketing conditions. It has led to a

tremendous increase in market transaction in regulated markets of the district.

The traders, margin is shown as minimum 8.24 per cent in pulses to maximum 19.41 per cent in potato, while in rural markets minimum margin is fetched by pulses as 8.16 per cent only, and maximum up to 30.74 per cent by potato. Table- 6.10 shows that the wholesaler's margin in regulated market is lower than the periodic market, while retailer's margin is higher in periodic markets. But the table shows that, overall, there has not been much reduction in the total costs of marketing. The study further indicates that the largest beneficiary in the marketing channel is the wholesaler who has fetched maximum 14.24 per cent margin in onion to minimum 5.74 per cent in pulses in the regulated markets. Similarly in periodic markets his share is higher as compared to regulated markets. Maximum share is found in potato as 24.74 per cent and minimum of 8.83 per cent in wheat. Transportation charges are very nominal between 1 to 2 per cent of the retail price. The costs of marketing vary between 9 to 12 per cent of the retail price. The price spread of agro-commodities indicates that there is little variation in producer's share in the case of Araria district and other markets of the Northern Bihar[1]. This means that there are broad similarities in marketing structure and function and its performance in the study area.

6.5.2 Net Price Received By the Producer

Apart from the study of producer's share in consumer's price, an attempt has been made to estimate the net price received by the producer through different marketing channels in the sampled markets and their hinterland of Araria district. This indicates not only the efficiency of marketing channels but also the relative importance of

---

[1] Sinha, S P. and Verma, B. N. (1974), *A Study of Marketable Surplus, Marketing Costs and Margins of Foodgrains in North Bihar*, University of Bihar, pp.16-17.

different channels in the overall marketing system. It has been observed that choice lies between selling direct to consumers and indirectly through various market intermediaries. The government agencies, however, do not purchase directly from the farmers. They mostly collect levy from wholesale traders.

The net price received by the producer sellers as indicated by the analysis of marketing costs and returns to the producers in the marketing of agro-commodities through various marketing channels is shown in Tables-6.10 to 6.15. These tables show that the farmers are selling their commodities directly to the village traders, itinerant traders, *katcha arhatiyas*, wholesale traders, retailers and directly to the consumers. However, rice growers have received net prices in decreasing order, through direct sale to consumers, to *katcha arhatiyas*, to retailers, to wholesale traders, to the itinerant traders, and to village traders. These prices are Rs 945; 942.67; 942.51; 936.73; 935.10; and 930.90 per quintal respectively (Table-6.10). For wheat it is Rs 6.25 sold directly to consumers, Rs 620.92 sold to *katcha arhatiyas*, Rs 619.71 sold to retailers, Rs 616.82 sold to wholesalers, Rs 615 sold to itinerant traders and Rs 611.60 sold to village traders (Table-6.11). For Maize it is Rs 526 for direct sale to consumers, Rs 516.59 for sale to katcha arhatiyas, Rs 518.53 for sale to retailers, Rs 513.72 for sale to wholesalers, Rs 507 for sale to itinerant traders and Rs 502.20 for sale to village traders (Table-6.12). For pulses it is Rs 1991 for sale direct to consumers, Rs 1985.92 for sale to *katcha arhatiyas*, Rs 1981.27 for sale to retailers, Rs 1978.39 for sale to wholesalers, Rs 1975 for sale to itinerant traders and Rs 1970.90 for sale to village traders (Table-6.13). For Potato it is Rs 351 for sale directly to consumers, Rs 343.54 for sale to *katcha arhatiyas*, Rs 341.22 for sale to retailers, Rs 339.31 for sale to wholesalers, Rs 333.25 for sale to itinerant traders and Rs 331.30 for

sale to village traders (Table-6.14). For Onion it is Rs 432 for sale directly to consumers, Rs 425.92 for sale to *katcha arhatiyas*, Rs 421.54 for sale to retailers, Rs 417.69 for sale to wholesalers, Rs 415. 50 for sale to itinerant traders and Rs 413.40 for sale to village traders (Table-6.15).

The above findings show that direct sale to consumers has fetched highest net price to the producer sellers. The sales through *katcha arhatiyas* and retailers are the next profitable channels for the producer sellers. However, it is observed that only a small portion of the produce can be sold at a time through direct sale to consumers and retail sellers. The sale in the market through *katcha arhatiyas* and wholesalers is the third best channel and much more remunerative as compared to the sale through the village traders and itinerant traders. The remunerativenes of different marketing channels is exactly similar for all agro-commodities.

Table-6.10

Marketing Costs and Returns of Rice through Different Marketing Channels in Araria District (2002-2003)

SN	Marketing Channels	Gross Price Obtained by Farmers	Marketing Costs Incurred by Farmers									Net Price Obtained by Farmers
			Transportation	Loading, Unloading Charges	Cleaning	Sewing	Weighing	Brokerage	Commission	Market Fee	Total	
	RICE											
1	Sale Through Village Traders	930.96	-	-	-	-	-	-	-	-	-	930.90
2	Sale Through Itinerant Traders	935.10	-	-	-	-	-	-	-	-	-	935.10
3	Sale Through Katcha Arhatiyas	980	11.33	1	.50	-	-	-	14.70	9.80	37.33	942.67
4	Sale Through Wholesalers	984	9.45	1	1	-	-	2.66	-	33.16	47.27	936.73
5	Sale Through Retailers	990	9.45	1	1	-	-	267	-	33.36	47.48	942.51
6	Sale Direct to Consumers	945	-	-	-	-	-	-	-	-	-	945

Source Field Survey 2002-2003

(Unit in Rupees)

Table-6.11

Marketing Costs and Returns of Wheat through Different Marketing Channels in Araria District (2002-2003)

SN	Marketing Channels	Gross Price Obtained by Farmers	Marketing Costs Incurred by Farmers									Net Price Obtained by Farmers
			Transportation	Loading, Unloading Charges	Cleaning	Sewing	Weighing	Brokerage	Commission	Market Fee	Total	
	WHEAT											
1	Sale Through Village Traders	611.66	-	-	-	-	-	-	-	-	-	611.60
2	Sale Through Itinerant Traders	615	-	-	-	-	-	-	-	-	-	615
3	Sale Through Katcha Arhatiyas	650	11.33	1	.50	-	-	-	9.75	6.50	29.08	620.92
4	Sale Through Wholesalers	652	9.45	1	1	-	-	1.77	-	21.96	35.18	616.82
5	Sale Through Retailers	655	9.45	1	1	-	-	1.77	-	22.07	35.29	619.71
6	Sale Direct to Consumers	625	-	-	-	-	-	-	-	-	-	625

Source: Field Survey 2002-2003

(Unit in Rupees)

Table-6.12

Marketing Costs and Returns of Maize through Different Marketing Channels in Araria District (2002-2003)

S N	Marketing Channels	Gross Price Obtained by Farmers	Marketing Costs Incurred by Farmers									Net Price Obtained by Farmers
			Transportation	Loading, Unloading Charges	Cleaning	Sewing	Weighing	Brokerage	Commission	Market Fee	Total	
	MAIZE											
1	Sale Through Village Traders	505.22	-	-	-	-	-	-	-	-	-	**505.20**
2	Sale Through Itinerant Traders	507	-	-	-	-	-	-	-	-	-	**507**
3	Sale Through Katcha Arhatiyas	543	11.33	1	.50	-	-	-	8.15	5.43	26.11	**516.59**
4	Sale Through Wholesalers	545	9.45	1	1	-	-	1.47	-	18.36	31.28	**513.72**
5	Sale Through Retailers	550	9.45	1	1	-	-	1.47	-	18.55	31.47	**518.53**
6	Sale Direct to Consumers	526	-	-	-	-	-	-	-	-	-	**526**

Source Field Survey 2002-2003

(Unit in Rupees)

Table-6.13

Marketing Costs and Returns of Pulses through Different Marketing Channels in Araria District (2002-2003)

S N	Marketing Channels	Gross Price Obtained by Farmers	Marketing Costs Incurred by Farmers									Net Price Obtained by Farmers
			Transportation	Loading, Unloading Charges	Cleaning	Sewing	Weighing	Brokerage	Commission	Market Fee	Total	
	PULSES											
1	Sale Through Village Traders	1970.97	-	-	-	-	-	-	-	-	-	**1970.90**
2	Sale Through Itinerant Traders	1975	-	-	-	-	-	-	-	-	-	**1975**
3	Sale Through Katcha Arhatiyas	2050	11.33	1	.50	-	-	-	30.75	20.50	68.08	**1985.92**
4	Sale Through Wholesalers	2065	9.45	1	1	-	-	5.57	-	69.58	86.61	**1978.39**
5	Sale Through Retailers	2068	9.45	1	1	-	-	5.58	-	69.68	86.72	**1981.27**
6	Sale Direct to Consumers	1991	-	-	-	-	-	-	-	-	-	**1991**

Source: Field Survey 2002-2003

(Unit in Rupees)

Table-6.14

Marketing Costs and Returns of Potato through Different Marketing Channels in Araria District (2002-2003)

S N	Marketing Channels	Gross Price Obtained by Farmers	Marketing Costs Incurred by Farmers									Net Price Obtained by Farmers
			Transportation	Loading, Unloading Charges	Cleaning	Sewing	Weighing	Brokerage	Commission	Market Fee	Total	
	POTATO											
1	Sale Through Village Traders	331.34	-	-	-	-	-	-	-	-	-	**331.30**
2	Sale Through Itinerant Traders	333.25	-	-	-	-	-	-	-	-	-	**333.25**
3	Sale Through Katcha Arhatiyas	365.50	11.33	1	.50	-	-	-	5.48	3.65	21.96	**343.54**
4	Sale Through Wholesalers	364	9.45	1	1	-	-	.98	-	12.26	24.69	**339.31**
5	Sale Through Retailers	366	9.45	1	1	-	-	.98	-	13.23	24.77	**341.22**
6	Sale Direct to Consumers	351	-	-	-	-	-	-	-	-	-	**351**

Source: Field Survey 2002-2003

(Unit in Rupees)

Table-6.15
Marketing Costs and Returns of Onion through Different Marketing Channels in Araria District (2002-2003)

S N	Marketing Channels	Gross Price Obtained by Farmers	Marketing Costs Incurred by Farmers									Net Price Obtained by Farmers
			Transportation	Loading, Unloading Charges	Cleaning	Sewing	Weighing	Brokerage	Commission	Market Fee	Total	
	ONION											
1	Sale Through Village Traders	413.41	-	-	-	-	-	-	-	-	-	**413.40**
2	Sale Through Itinerant Traders	415.50	-	-	-	-	-	-	-	-	-	**415.50**
3	Sale Through Katcha Arhatiyas	450	11.33	1	.50	-	-	-	6.75	4.50	24.08	**425.92**
4	Sale Through Wholesalers	445	9.45	1	1	-	-	1.20	-	14.98	27.31	**417.69**
5	Sale Through Retailers	449	9.45	1	1	-	-	1.22	-	15.12	27.45	**421.54**
6	Sale Direct to Consumers	432	-	-	-	-	-	-	-	-	-	**432**

Source Field Survey 2002-2003

(Unit in Rupees)

References

(1) Cohen,R.L.(1958), *The Economics of Agriculture*, Cambridge, p-98

(2) Khan, N. (1991), *Agricultural Development and Marketing*, H. K. Publishers and Distributors. Delhi, p.202.

(3) Larson, A.L., (1957), *Agricultural Marketing,* Prentice Hall of India. Inc, p.379.

(4) Prasad, J. (1989), *Marketable Surplus and Market Performance*, Mittal Publication, Delhi, p-139.

(5) Sinha, S.P. and Verma, B. N. (1974), *A Study of Marketable Surplus, Marketing Costs and Margins of Foodgrains in North Bihar*, University of Bihar, pp.16-17.

(6) Suodgrass, M. M, and Wallace, L.T. (1982), *Agriculture Economics and Resource Management,* Prentice Hall of India, p.125.

CONCLUSION AND SUGGESIONS

Conclusion

This study examines the spatio-temporal patterns of the marketed surplus and the price structure of six important crops at three levels; at the village level, in the selected periodic markets as well as in the regulated markets of Araria district (Bihar). It also estimates the marketing costs and margins of these crops grown in this district.

It is realized through this study that streamlined movement of the farmers' surplus to the consumers through efficient marketing system would raise the income level of the farmers and promote the economic development of the study area in particular and Bihar in general. The farmers would be able to invest this profit in term of comparative advantage on modern agricultural inputs. It would help to attain enhanced production and productivity both. This, in turn, would contribute to increase the quantity of marketed surplus of the agricultural commodities their and inter-regional trade, which would facilitate the demand for improved market facilities.

However, before formulating any policy to attain these goals, it seems necessary to find out the marketing conditions under which surpluses are disposed off in markets, spatially and temporally. And it is necessary also to identify and quantify the marketing costs and margins that determine efficiency of the agricultural marketing system, so that the improvement can be directed towards the factors which are crucial in determining market efficiency. This research work has its genesis in the observation of the general neglect of these problems regarding marketable/marketed surplus of agricultural commodities and inefficient functioning of agricultural marketing in North Bihar. An understanding of all these factors in a backward and agriculturally sensitive region would provide substantial empirical evidences to the market planners

and policy makers to formulate relevant policies which would be of immense help in increasing the efficiency of agricultural marketing.

The agricultural marketing system begins with the farmer and his production activities, while at the other end of the system is the consumer. The process starts with the movement of farm products to the market and its contact with business firms or traders. The actual buying and selling activities are done under certain norms and also through some organizational system in Araria district.

The three tier analysis of agricultural marketing in Araria district, in this study, provides some insight about their relative importance and role in the development and efficiency of agro-marketing. The proportion of marketed surplus of these commodities at village level, in periodic markets, and in regulated markets indicates towards the level of development of agro-marketing system in Araria district. The study highlights that the modernization, efficiency and vigour of agro-marketing is positively dependent upon the uniformity of marketing practices, uniform regulatory provisions, accessibility to bigger market centers, reduction of market margins and of course on post-harvest storage facilities.

Thus as a generalized statement, it can be argued that structural changes in farming practice and marketing of agro-commodities would lead to effective integration of market centers. These market centers under uniform regulatory measures, being accessible to both small and big farmers, would provide better prospect for agricultural marketing. It would enhance overall efficiency of the system as well.

The findings of this study in coming paragraphs would reveal that according to general parameters of efficient agro-marketing, Araria district still has a very primitive marketing system. The greater transaction of agro-commodity at village level and in rural markets

amply proves the point that Araria has to go a long way before any positive change can take place for the general lot of a great majority of marginal and small farmers. As a large number of these farmers is at disadvantageous position, they have no say in the bargain. This inherent unequal power balance between the producers and the intermediaries in the existing system is the real bane of agro-marketing system in Araria which is reflected in, and furthered by, the overall inefficiency of this system.

The agricultural products are marketed through two types of trading system; private trading system (informal agencies) and public trading system (formal agencies). In private trading, the commodities are primarily operated by private traders, like wholesale traders, village traders, itinerant traders, commission agents, etc who purchase the agricultural surplus from the producers at free rate on the basis of price agreement between them and producer sellers.

Under the informal trading it is found that the producer seller sells his produce at the village site to one and several types of intermediaries or brings it directly to wholesale market. It is found from the survey that paddy has been purchased in the largest proportion by mills constituting 59.55 per cent, followed by periodic markets with 8.79 per cent of total transaction performed through different informal marketing agencies. Similarly, rice has its share of 35.96 per cent, wheat 35.96 per cent, maize 25.73 per cent, pulses 51.29 per cent, potato and onion 50.18 per cent respectively of the total transaction in the village markets. This finding shows the overwhelming importance of informal trading system in the marketing of agricultural commodities in Araria district.

On the other hand under formal trading system, public or government agricultural trading system has come into existence with a

view to ensure fair price for producers' surplus as an incentive to increase the production, to supply essential commodities to the consumers at reasonable price, to minimize seasonal fluctuations and to maintain the buffer stock. The main public trading agencies are Food Corporation of India (FCI) and State Food Corporation (SFC). Under formal agencies, regulated markets are one of the most important agencies of agricultural marketing system. They have accounted for transaction of 24.45 per cent of marketed surplus of paddy, 63.4 per cent of marketed surplus of rice, 32.26 per cent of wheat, 74.27 per cent of maize, 48.71 per cent of pulses. Potato and onion have accounted 59.29 per cent and 49.82 per cent respectively. Other government agencies like FCI and SFC purchase only wheat and paddy to minimize seasonal fluctuation of their prices and to undertake procurement for maintenance of the buffer stock.

The village level survey of transaction of the agricultural commodities shows that paddy has recorded highest share of marketed surplus in regulated markets. While in the case of vegetables especially onion, they have been transacted in largest proportion at village market among different market agencies. Maximum transaction at village level is under taken especially by the small and marginal farmers. They have very small size of marketable surplus which discourages them to sell their surplus in distant and specialized agricultural markets, to avoid unnecessarily transport and time costs. The purchase of agricultural produces by consumers directly from growers/farmers house is another important agency of agricultural marketing channel in which the margin of commission agents to consumers' price is reduced. So both farmers and consumers get benefited. Besides, time of the consumers (usually agricultural and land less laborers) is saved in which they can earn more wages.

Study area experiences various methods of transaction of agro-commodities at market and farm levels. Undercover, open auction, quotation on samples, private negotiation and close tender are important methods of transaction. The undercover and by quotation on sample methods are practiced only in wholesale periodic markets, whereas, open auction is generally practiced in government control regulated markets. Moreover, in this study various market channels of agro-commodities are also being identified. Generally, marketing of agricultural commodities undergo change of ownership through time and space. The intermediaries are involved in the passing of commodities from producers to ultimate consumers which form marketing channels. Paddy/rice and wheat are having rather complex channels than maize, pulses, potato and onion. It is due to spatio-temporal variations in their demand and supply.

Spatial pattern of marketed surplus of selected crops in the sampled markets show that rice accounts for highest share of 46.63 per cent of total marketed surplus of various agricultural products. It is followed by wheat with 26.45 per cent, potato 10.38 per cent, onion 9.91 per cent, maize and pulses 3.32 per cent and 3.33 per cent respectively. The variation in marketed surplus of different crops in the district is due to variation in demand and supply of these commodities in the region.

Similarly, different types of marketing agencies dealing with agricultural commodities also show variation in their marketed surplus. Regulated and urban periodic markets have highest proportion of marketed surplus in the study area. Analysis shows that the market centers which are well connected with roads and railways have a higher proportion of marketed surplus. Moreover, the market centers which are located in the eastern and northern parts of Araria district have higher

marketed surplus of the agricultural commodities than that of the market centers located in the western side of the district. It is because of well connectivity of eastern and northern parts as well as higher agricultural productivity in these regions. On the other hand lower marketed surplus in the western part of the district is due to lower productivity of crops caused by flood from *Kosi* river as well as lesser spatial connectivity among the markets. This supports the hypothesis that better spatial integration of market centers at different levels due to efficient transportation and other infrastructural facilities reduces unnecessary spatial unevenness of marketed surplus.

Seasonal arrival pattern is discussed on the basis of three main periods (1) post-harvest period (2) intermediate period, and (3) lean period. The study of the seasonal pattern of marketing of selected crops indicates that the arrivals do not follow any definite pattern during an agricultural year. It is due to the fact that most of commodities have a different growing time during an agricultural year. Study reveals that average arrival of marketed surplus for the district as a whole during post-harvest period is 51.62 per cent and during intermediate period it is 29.40 per cent. Whereas during lean period it constitutes 18.98 per cent. The arrivals of marketed surplus of these commodities vary spatially and temporally, crop-wise and market-wise. Similarly study finds that arrivals of marketed surplus of potato and onion are highest i.e. 57.42 per cent and 55.47 per cent respectively, during post-harvest period. While during lean period the shares of onion and potato are 14.11 per cent and 14.51 per cent of their overall arrivals respectively.

Largest proportion of the arrivals of the marketed surplus of potato and onion during post-harvest period is due to the fact that they are cash crop and of perishable nature as well, hence the farmers immediately wish to sell them. Moreover, highest arrival of marketed

surplus of all agro-commodities during post-harvest period indicates that small and marginal farmers sell a large quantity of their surplus, particularly as distress sale, immediately after the crop harvest. The result further shows that seasonality of arrivals is found more pronounced in cash crops than in non-cash crops. It means that producer sellers lack storing facilities and consequently sell their produces in the market immediately after harvest. This supports the hypothesis that there is a wide fluctuation in seasonal arrival of marketed surplus of different agricultural commodities.

The volume of marketed surplus of agricultural commodities in the sampled markets has improved well during the period 1993-2003 at an average annual rate of 3.23 per cent in all the selected markets. General trend of growth of the marketed surplus has been the result of the agricultural development in the study area, through the horizontal and vertical growth in agriculture in terms of area and production respectively, during post-green revolution period.

The growth of marketed surplus is not uniform in every market but varies spatially among the periodic and regulated markets. Maximum growth has been recorded in both the selected regulated markets i.e. 7.66 per cent in Forbesganj and 3.01 per cent in Araria, while in selected periodic markets, marketed surplus varies from maximum 1.83 per cent in Araria Court to minimum 0.79 per cent in Lalokhur. Wide difference in the growth of marketed surplus in regulated and periodic markets is attributed to the fact that market regulation restricts malpractice in the transaction of agricultural commodities and thus becoming an incentive for farmers to sell their produce there. That is why marketed surplus has increased sharply in regulated markets than the periodic markets. It supports the hypothesis that government intervention in terms of regulation measure leads to

greater market efficiency and consequent to it there is rapid increase in the marketed surplus in the regulated markets in comparison to periodic market centers.

A Spatial analysis of the of marketed surplus of the agricultural commodities at the level of operational land holding indicates that the proportion of sales of all agricultural commodities i.e. rice, wheat, maize, pulses, potato and onion at village level itself is very high indicating thereby the preference of the farmers to sell their produce at their door. The proportion of the total sale at village level for all selected crops as a whole is 39.45 per cent and it varies crop-wise. The larger percentage of marketed surplus of different crops at village level is on account of the poor transportation and communication facilities to carry produce to far-off big markets. However, farmers with largest size of holding (above 8 acres) sell 49.63 per cent of their total surplus in the regulated and urban market centers. While farmers with lowest size of holding (up to 2 acres) have almost negligible presence in these market centers.

A further analysis of the marketing pattern shows that proportion of sale in the specialized market centers rises as the size of landholding increases. It is on account of the fact that the big farmers have large marketable surplus and own means of transportation and therefore they do not find any difficulty in selling their produce in the main market centers. The poor farmers lack transportation facilities and also they have small quantity of surplus to sell in the main market centers. It supports the hypothesis that big farmers are more dominant in selling their produce in the regulated and urban market centers than the small one.

The over all proportion of marketed surplus of all selected commodities shows that regulated markets and periodic markets have

their increased share. But a closer look of the situation reveals that transaction in regulated markets is mostly done by big farmers. Small farmers are found almost negligible in these markets. Thus the advantage of regulated markets disproportionately goes to big farmers skewing the socio-economic equilibrium of the village as well as tilting power leverage in the agricultural marketing system in favour of big farmers and intermediaries.

The variables selected for analyzing the price behaviour of six important agricultural crops namely rice, wheat, maize, pulses, potato and onion, are the wholesale purchase price and wholesale sale price in three different agricultural seasons. The wholesale purchase price refers to that which the wholesalers/commission agents pay to the producer sellers and other selling agencies; whereas the wholesale sale price refers to that which the retailers and other traders pay to the wholesalers/commission agents. From the analysis of the data, it is found that there is wide difference in the wholesale purchase and wholesale sale prices of agricultural commodities between post-harvest and lean periods. It is due to seasonal character of the production and arrival patterns of these agricultural commodities, while their consumption is more or less uniform over different months of the year. It leads to seasonal fluctuations in their prices.

Moreover, crop-wise study shows wide fluctuations in the prices of these commodities. As far as rice is concerned maximum seasonal variations are up to 76.32 and 63.71 per cent in wholesale purchase and wholesale sale prices between post-harvest period and lean period. For wheat, maize and pulses the maximum seasonal variations in wholesale purchase price between post-harvest and lean period are 37.89 per cent, 27.05 per cent and 20.21 per cent respectively. On the other hand, the maximum seasonal variation in wholesale sale price between these two

periods for wheat, maize and pulses are 31.36 per cent, 33.25 per cent, 22.37 per cent respectively. Maximum seasonal variations in wholesale purchase and wholesale sale prices between post-harvest and lean period for potato and onion have been recorded 161 per cent, 126.76 per cent and 152.77 per cent, 112.26 per cent respectively. Potato and onion have recorded maximum seasonal variations in their prices because of their perishable nature and being commercial crops.

The seasonal behaviour of the wholesale purchase price over the space constitutes the most important indicator of the efficiency of marketing system. Spatially, the variations in price do not seem much, however, it varies market-wise. Spatial patterns of price structure of different crops show that regulated and urban periodic markets are having better price structure of the selected agricultural commodities than the smaller and inaccessible periodic market centers. Location and size of market centers play a decisive role in determining the price structure of different agricultural commodities. The result shows that there are not much spatial variations in minimum and maximum prices of the commodities both in regulated and periodic markets. It shows that these markets are very much spatially integrated. Whereas, the seasonal variation in the prices is more pronounced in the markets of Araria district. Besides, another marked feature of the study area is that the seasonal fluctuation in prices of agro-commodities is less pronounced in foodgrains and pulses compare to the cash crops i.e. potato and onion, it is more pronounced. This supports the hypothesis that seasonal price fluctuation is more pronounced in an agriculturally backward area.

The Araria district is a deficit region of agricultural products, especially, of food crops. It is a consuming market where agricultural commodities are brought and sold by the traders belonging to places outside the district, especially from the terminal markets. Further, from

the point of view of the supply side, the crops of inferior quality are marketed here under a situation of compulsions, which are dumped in the market immediately after harvest. This leads to wide fluctuation in the prices. As a result the seasonal variations of wholesale sale price and wholesale purchase price are high. However, a market-wise comparison of price structure of different agro-commodities shows that traders' manipulative grip over the producer-sellers and itinerant traders is stronger in interior and smaller markets than their counterparts in regulated markets.

The costs of marketing are expenses incurred in bringing goods and services from producers to consumers. It is found that the costs of marketing of agricultural commodities are high in the study area. The factors responsible for high costs of marketing are too many and these make the agricultural marketing system highly exploitative in character and imperfect in nature. Analysis of the types and variations of costs indicates that the various markets charges; particularly among periodic markets are not uniform and they are mostly charged in an arbitrary manner. These charges not only show large variation but the mode of their payment also differs, which is payable by the sellers in some instances and the buyers in other. The main drawback of these charges is that there is no uniformity or generally recognized rules as to which charges should be payable by sellers and which by buyers. However, in recent years, the Government of Bihar through the Bihar Agriculture Produce Markets Act, 1960 and its subsequent amendments therein, has made certain provisions under which each market charge has been clearly defined and fixed. But it is practiced only in government controlled regulated markets.

In the present study, the price spread has been estimated by comparing the prices at different levels of marketing with the help of

method of concurrent margin. While studying the various components of price spread attention has been focussed on producers' share in the consumers' price. It is hypothesized that larger the price spread the greater is the inefficiency in the marketing system, and vice-versa. The study indicates that higher marketing costs and price spread is largely on account of high handling and transportation costs, greater loading and unloading charges and high commission charges along with some unspecified charges by intermediaries. A further comparative analysis of price spread of regulated and periodic market shows that the producers' share in consumers' price is higher in the regulated markets. It is because of regulatory measures introduced in these markets, and to this extent this may be said as a positive gain of the establishment of the market yard. The study of the net price received by the producer seller through different marketing channels reveals the fact that the direct sale to consumer fetches the highest net price to producer seller. The sale performed through the *katcha arhatiya* is the next profitable channel for the producer seller. The sale performed through the retailer is the third best channel and much more remunerative as compared to sale taken place through the wholesaler, the village merchant and itinerant dealer. The most important factors which affect the price spread are (a) multiplicity of intermediaries and their profit margin. (b) transport and storage costs (c) commission and brokerage charges. (d) handling costs etc.

From the above discussion it is clearly evident that agricultural marketing in Araria is varied in terms of space and time with respect to arrival and prices. Market arrival plays an important role in determining price of agro-commodities as it represents supply side. However, the study area is having highly imperfect nature of market due to its oligopolistic tendencies, inadequate system of marketing, and lack of

infrastructural facilities. The imperfect nature of the agricultural marketing system has been serving as a serious constraint for the development of the agricultural sector and has resulted in non-remunerative price to the farmers on the one hand and unreasonable price to the consumers on the other. The conditions, under which the farmers dispose of their produce and the price which they receive from them, have significant bearing on their farm activities. It is now commonly believed that the improved marketing facilities contribute to the agricultural development by encouraging magnitude of production. Actual loss of products is caused by the inefficiencies in their movement from the farmers to the consumers, passing through various phases like. processing, storing and transportation of the agricultural products. The variation in the storage costs and loses are very high. Transportation and handling losses also vary with the nature of crop and technique of marketing. The presence of various undesirable market charges and the exploitative behaviour of the traders contribute to higher marketing costs and price spread.

An efficient marketing system encourages increase in agricultural production by reducing the marketing costs incurred by the producers and by lowering the prices paid by the consumers. This expands the market and subsequently brings higher returns to producers. The need for an efficient marketing system calls for an improvement in existing marketing system. Since the recommendation of Royal Commission on Agriculture (1928) the central government has taken a number of measures to improve agricultural marketing in the country. Among such measures taken by the state government mention may be made of constitution of Agricultural Marketing Section of the Department of Agriculture in March 1935, the Agriculture Produce (Grading and Marketing) Act 1937, regulation of markets, throughout the state, the

market development project introduced in 1973 to develop and modernize the agricultural markets in Bihar to take over the wholesale trade in the year 1974 etc. Some of these measures have attained partial success, while others are either completely withdrawn or are in the initial stages of implementation. Even after the establishment of market yard at important places it still remains a dream to achieve the goal of efficient marketing system.

Suggestions

Thus, the present study suggests that in order to promote the efficiency of agricultural marketing and optimal distribution as well as to augment marketable/marketed surplus, an integrated market development policy comprising the following measures should be applied to the marketing of agro-commodities.

First, the government should adopt the policy to increase the agricultural production, with a view to increase marketable/marketed surplus. Although considerable progress has been made, particularly over the last two decades but the production in the state has not yet attained the desired results as anticipated by the state government. A major reason for this disappointing position is that not enough attention has been devoted to provide for the facilities and services which must be available to the farmers if agriculture is to develop. The past government policy is not found any more relevant or effective in present situation, in assisting orderly distribution of marketed surplus and in providing better prices to the farmers for their produces. The findings of this study indicate that the development of big urban and regulated market does not appear to be fruitful for the small and marginal farmers. A very large percentage of the farmers, particularly small and marginal, find it more convenient to sell its produce in villages and *haats*. It is thus, clear that rural primary markets including *haats* are more relevant,

and will continue to be so for many years for the great majority of the farmers. With this reality the basic task of the government is to reorient the regulatory measures in favour of periodic markets by providing marketing and credit facilities which alone can protect the farmers from the exploitation of various intermediaries existing between them and the consumers.

Secondly, since the farmers sell the largest proportion of their production during the three/four months immediately after the harvest, stability of harvest price is an important issue for the agricultural production and the marketing decisions. The price which farmers receive during this period influences the proportion of harvested crops sold during this period, as well as their ability to finance next year's crop. The farmers should be assured of at least the minimum price after post-harvest on which they can survive as well as invest for cultivation of a particular crop. This means that there should be an effort on the part of the government to stabilize prices particularly during post-harvest period.

Thirdly, though seasonal fluctuations are not expected to be wiped out altogether from an agricultural market but their effects can be minimized. Large seasonal fluctuation in price causes a hardship on consumers. This also leads to conservative storing plans for the following years. Seasonal price instability encourages speculations by those who are often not experts of market conditions and this introduces a great degree of uncertainty into the production plans of the farmers, and the marketing plans of consumers. A financial help in the form of easy credit and aid to the farmers particularly small and marginal ones, on the pledge of taking their produce for marketing can also play an important role in minimizing their dependency on the intermediaries. Thus, a balanced program should be attempted to raise and stabilize

harvest price, while holding within limits the variability in seasonal price fluctuations.

Fourthly, the present study indicates, the price spread is quite large on account of various undesirable marketing charges and arbitrary deductions made by the traders. It, therefore, becomes imperative that the efforts should be made to increase producers' share in consumers' price, thereby causing a reduction in the wholesalers' and retailers' margins. However, it is encouraging to note that the trade margin has fallen after the establishment of the regulated markets due to abolition of various undesirable market charges. Still a large number of small and large farmers sell their crops in periodic markets. There is a need to strengthen this aspect with the help of the government to reduce the marketing margin in periodic markets too.

Fifthly, marketing can not be divorced from a consideration of production process. Farmers need integrated assistance for their production activities. The problems faced by small farmers in marketing their output arise basically from the conditions under which they produce. They borrow even to meet their consumption needs. Their farm business income is far below the minimum, which is necessary for bare survival. As they borrow mostly from the village money-lenders, they are bound to sell their commodities to them as they have taken loan at the lower interest rates. The marketing system is dominated by the small farmers therefore government intervention is essential to protect the interest of the farmers by giving loan at right time. The problems of production and marketing need to be tackled simultaneously through integrated agricultural policies. Any one-sided approach is not likely to yield much result.

Sixthly, the organization of cooperative marketing requires additional preference for improving the marketing conditions. Because

it will strengthen the bargaining power of the farmers at the first stage of marketing i.e. from the farm to wholesale market. Though, cooperative marketing is not playing any important role in agricultural marketing in the study area, it is possible to inter-link cooperative credit and cooperative marketing to reduce the dependence of farmers on influential intermediaries and money lenders.

Lastly, the findings of this study have a large range of implications. It needs appropriate measures to facilitate the marketing efficiency. Because, there is ample evidence to show that inspite of several measures, agricultural trade has neither experienced a change in techniques of marketing nor the improvement in the marketing conditions of the majority of the farmers. This failure is mainly attributed to the non-adoption of an integrated market development policy and to the lack of positive and facilitating role on the part of the government. The present study, overwhelmingly, shows that markets of Araria district are integrated spatially while temporal (seasonal) fluctuations are pronounced in the arrivals and prices of agro-commodities, however, government controlled regulated markets show some positive impact on improvement of the overall marketing system. The need, therefore, is to supplement the scheme of modernization of agricultural marketing through a well-designed 'integrated market development policy' comprising all the measures as suggested above, in improving the existing structure of market, its functions and performance. Any strategy for the overall development of agriculture appears ineffective, in the absence of an efficient integrated farming marketing system, in the study area in particular and in the country in general.

GLOSSARY

GLOSSARY

Local Words	English Equivalents
Arhatiya	Commission agents in agricultural markets playing middle men role for both sellers and purchasers for selling the agricultural commodities
Aghani	Winter season crop
Batti	Market tax in periodic/rural markets
Bhadai	Rainy season crop
Beopari	Businessman
Bora	A bag of jute/plastic
Dalal	Broker
Dhoti	A kind of cloth worn by Indian male
Gaddi	Traditional Indian business place at an agricultural market center.
Garma	Orchard crops
Ghee	Clarified butter
Gur	A form of crude sugar
Jhil	Lake
Haat	Periodic market
Katcha Arhatiya	Commission agent who assembles agricultural products in regulated markets
Kharif	Rainy season crop
Khader	New alluvium
Mandi	Regulated market
Palledar	The person appointed for processing, cleaning, sieving agro-commodities
Panchayat	Village level governing body
Pucca Arhatiya	Commission agent who Purchases commodities from farmers in regulated markets through katcha arhatiya
Rabi	Winter season crop
Shandis	Periodic market
Taluka	Headquarter either district/block
Tulai	Process of weighing of agricultural commodities
Tals	Ponds
Zaid	Summer season crops
Zamindar	*Landlord*

APPENDICES

Appendix-I

Questionnaire for Market Center

(1) Name of the Market/Mandi----------

(2) Nature of Market Periodic-Urban/Rural, Regulated.

(3) Distance from the Town----------

(4) Date of establishment----------

(5) Area of Market Site----------sq.m/acres

(6) Market Days S/M/T/W/TH/F/S/Daily

(7) Planned or unplanned

(8) Location (a) Middle of Town

(b) At entrance point

(c) Open Space

(9) Physical Facilities Available

(a) Area of the Market yard----------sq. meters

(b) No of shops---------Size----------

(c) Number of auction platforms-----

(d) No of Stores----------(Godowns)

(e) No. of registered Traders------

Agents-----

(f) Building—Mandi Office, Bank, Post Office, Canteen, Rest House, Water Hut, Cattle Shed.

(10) Marketing equipments available (quantity), weighing, scale, moisture meters etc

(11) Price Setting by Open bidding, close bidding, individual bargaining, or other specify

(12) Payment procedure

On spot in cash, cash through market office, coupon to be cashed later through agent

(13) Market Fees/other fees

(a)	Marker fee	@ Rs----------per-------who pays.
(b)	Grading fee	@ Rs----------per-------who pays.
(c)	Weighing fee	@ Rs----------per-------who pays.
(d)	Agent/Arhatiya fee	@ Rs----------per-------who pays.
(e)	Storage fee	@ Rs----------per-------who pays.

(14) General problem (s)

Appendix-II

Questionnaire for Producer/Farmer

(1) Name--------Market-------

(2) Caste----------

(3) Size of the landholding –(a) Up to 2 acres (b) 2.1-4 acres (c) 4.1-8 acres (d) Above-8 acres.

(4) Name of the village (Residence)

(5) Commodities brought by him (a)----------(b)----------(c)----------

(6) Quantity brought by him (a)----------(b)----------(c)----------

(7) Sale price per quintal commodities-wise (a)----------(b)---------- (c)----------

(8) Connected by metalled road/un-metalled road or cart track.

(9) Mode of transport-tractor, truck, bullock cart, rickshaw cycle, cycle and others.

(10) What are the benefits to sell in the market?

(a) In disposal of products

(b) In terms of price of the products

(c) In terms of price

(d) Others specify

(11) Costs of Marketing

(a) Transportation----------

(b) Market Fee----------

(c) Commission Agents/ Arhatiya----

(d) Weight man----------

(e) Brokerage----------

(f) Others----------

(12) Problems in Marketing and at market centers.

(a) Transportation problem

(b) Grading Problems

(c) Payment problems

(d) Any other problem in market

(13) Suggestion for improving in marketing facilities.

(14) From how many years you are coming to this market for selling agricultural commodities----------

(15) Change in the nature of marketed surplus

Agro-commodities	Marketed Surplus (in quintals)	
	(1993)	(2003)

Appendix-III

Questionnaire for Trader/Agent

(1) Name--------Market-------

(2) Caste----------

(3) Trader/Commission agents or both/ Retailers in case of periodic markets

(4) Wholesalers

(5) Commodities purchased by him(a)----------(b)----------(c)----------

(6) Quantity purchased by him (a)----------(b)----------(c)----------

(7) Purchased Rs/ per quintal commodities-wise (a)----------(b)----------(c)-------

(8) Costs of Marketing

(a) Market fee----------

(b) Transportation---------

(c) Commission Agents/ Arhatiya----

(d) Weight man----------

(e) Brokerage----------

(f) Others----------

(9) Selling costs----------

(10) Net trade margin---------

(11) Problems in Marketing and at market centers.

(e) Transportation problem

(f) Grading Problems

(g) Payment problems

(h) Any other problem in market

(12) Suggestion for improving in marketing facilities.

Note: There are some questions which are either only applicable in Periodic or Regulated Market

Appendix-IV

Questionnaire for Rural Household Survey

(1) Name of head of house-hold survey

(2) Caste----------

(3) Size of the landholding –(a) Below-2 acres (b) 2.1-4 acres (c) 4.1-8 acres (d) Above-8 acres.

(4) Proportion of marketed surplus of different commodities at different marketing agencies.

S N	Commodities	Village Level Sale			Sale in Rural/Periodic Markets		Sale in Regulated/Urban Markets			Sale to Government Agencies
		Direct to Consumer	Sale to village traders	Sale to itinerant traders	Sale to retailers in Rural Markets	Sale to wholesalers in Rural Markets	Sale to Katcha Arhatiys	Sale to Puccsa Arhatiys	Sale in the Towns Markets	
1	Paddy Rice									
2	Wheat									
3	Maize									
4	Pulses									
5	Potato									
6	Onion									

(5) Price Structure and Marketing Costs of different agricultural commodities through Different Agencies at different levels

Sold Agricultural Commodities	Sold Agencies	Gross price	Costs of Marketing in Rs							Net Price Received
			Processing Costs	Transportation Costs	Market Tax	Commission	Brokerage	wastage	Miscellaneous	

(6) Mode of Transportation for visiting markets-tractor, truck, bullock cart, rickshaw cycle, cycle and others.

(7) Problems in Marketing.

BIBLIOGRAPHY

BOOKS

Acharya, S S and Agarwal, N L (1987), *Agricultural Marketing in India,* Oxford and IBH Publishing Company, Delhi

Agarwal, N L (1986), *Agricultural Prices and Marketing in India*, Mittal Publication, Delhi

Arya, A (1993), *Agricultural Marketing in Gujarat*, Concept Publishing Company, New Delhi

Adam, J (1680), *An Alphabetical List of All Cities Market Towns Parishes, Villages, and Private Seats in England and Wales* London

Amarchand, D and B Varadharajan (1980), *An Introduction to Marketing*, Vikas Publishing House Private Ltd , New Delhi

Applebaum, W (1954), Marketing Geography, in James P E and Jones, C F (ed) *American geography Inventory and Prospects*, Syracus

Balshaw, C S (1965), *Traditional Exchange and Modern Markets*, Prentice Hall of India, New Delhi

Bedekar, S L (1972), *Role of Regulated Markets in the Development of Rural Areas* in N C A E R Market Towns and Spatial Development, New Delhi

Berry, B J L (1967), *Geography of Market Centres and Retail* Distribution, Prentice Hall

Bidikar, A S (2002), *Spatial Analysis of Market Centres in Drought Prone Areas A Case Study of Bijapur District*, unpublished thesis submitted to Karnatka University, Dharwad

Bourne, H R E (1871), *The Romance of Trade*, London

Brookfield, H (1975) , *Independent Development*, Methuen, London

Bromely, R J (1974), *Periodic Markets, Daily Markets and Fairs A Bibliography*, No 10, Melbourne

Brunk, M E and L B Darrah (1955), *Marketing of Agricultural Products,* The Ronald Press Company, New York

Bauer, P T (1976), State Control of Marketing in Developing Countries p 30-34, in Izraeli et al (ed) *Agricultural Marketing for Developing Countries,* INCOMAS, Vol II, John Wiley, New York

Christaller, W. (1966), *Central Place in Southern Germany,* Translated from German (1933) into English by Baskin, C.W., New Jersey.

Cleef, E.V. (1937), *Trade Centres and Trade Routes,* D. Appleton-Century Co. New York.

Cumming (Jr.) R.E. (1969), *Pricing Efficiency in the Indian Wheat Market,* Impex India, New Delhi.

Davis, R.L. (1976), *Marketing Geography with Special Reference to Retailing*, London.

Dantwala, M.L. (1961), *India's Food Problem,* Asia Publishing House, Bombay.

Dixit, R.S. (1984), *Market Centres and their Spatial Development in the Umland of Kanpur*, Kitab Mahal, Allahabad.

Garnier, B. J and Delobez,, A. (1979), *Geography of Marketing*, Longman.

Gopal, R. (2001), *Rural Marketing Development*, Policy, Planning and Practice, Rawat Publication, New Delhi.

Gupta, A.P. (1975), *Marketing of Agricultural Produce in India*, Vora and Co. Publishers Pvt. Limited, Bombay.

Hodder, B.W. and Lee, Rojer. (1974), *Economic Geography*, Methuen, London.

Izraili, D., Izraeli, D.N. and Meissner, F. (eds) (1976), *Agricultural Marketing in Developing Countries*, INCOMES Proceedings, Vol. I and II, John Wiley, New York.

Joshi, V.R.(1966), *Regulated Markets in Gujarat*, Ph.D. Thesis, Sardar Patel University, Vallabh Vidya Nagar.

Jain, S.C.(1971), *Principles and Practice of Agricultural Marketing* and Prices, Vora and Co. Publishers Pvt. Limited, Bombay.

Harriss, B.(1985), *Markets and Inter-Sectoral Resource Transfer*, Proceedings of the inst. Workshop on Agi Marketing in Semi-arid Tropics.

Harriss, B. (1983), *State and Market*, Concept, New Delhi.

Harriss, B. (1985), *How to Study Agricultural Marketing and How Not to Study it*, working paper No.7, Madras Inst of Dev. Studies)

Henery, K. (1954), *Food Administration in India*, Stand Ford University, California.

Holmes, S.(1969), *Market Structure and Conduct and Foodgrain Pricing Efficiency in a North Indian Tehsil*, Ph.D. Thesis, University of Marry Land.

Hussain, M.M.(2003), *Role of Ecological Factors in the Agricultural Development of North Bihar Plain,* unpublished thesis, Department of Geography, A.M.U.Aligarh.

Ibrahim, R.(1984), *Market Centers and Regional Development*. B.R Publishing Corporation.

Kahlon, A.S &George, M.V. (1985), *Agricultural Marketing and Price Policies*, Allied Publishers, Delhi.

Kahlon, A.S. (1970), *Impact of Changing Conditions on Grain Marketing Institutions and the structure of Grain Markets in Punjab*, Punjab Agricultural University, Ludhiana.

Khan, N. (1999), Role of Periodic Markets in Agricultural Marketing in North India- A Case Study of Faizabad District in Shrivastava V.K. (ed), *Commercial Activities and Development in Ganga Basin*, Concept Publishing Company, New Delhi.

Khan, N. (1991), *Agricultural Development and Marketing*, H.K, Publisher and Distributors.

Khusro, A.M. (1969), *The Economics of Bufferstocks and Storage of Major Food Grains in India*, Institute of Economic Growth, Delhi.

Khols, R.L. (1967), *Marketing of Agricultural Products*, 3rd Ed, Machmillan, London.

Kohls, R.L. et al (1980), *Marketing of Agricultural Products*, Macmillan Publishing Company Inc. New York, 5th Edition.

Kotler, P. (1972), *Marketing Management Analysis*, Planning and Control, Prentice Hall of India Pvt. Ltd., New Delhi.

Krishnan, M.S. (1968), *Geology of India and Burma*, Madras.

Kulkarni, K.R. (1956), *Agricultural Marketing in India*, Vol.1, Bombay.

Kulkarni, B.D. (1977), *Functioning of Regulated Markets in Sholapur District with Special Reference to Groundnut, and Bajra,* Ph.D. Thesis, Shivaji University.

Larson, A.L. (1957), *Agricultural Marketing*, Prentice Hall of India.

London, P. (1975), *Merchant as a Promoters of Rural Development: An Indian Case Study*, Praeger, New York.

Long, M. (1977), *An Introduction to the Sociology of Rural Development,* Tavistock, London.

Lorenzl, G. (1978), *Agricultural and Food Marketing in Soci-economic Development*-A working paper, German Foundation For International Development, Buslin

Mallick, S.C. (1976), *Marketing of Rice in Orissa*, Ph.D. Thesis, Orissa University of Agricultural and Technology.

Mathur, B.S. (1971), *Cooperatives in India*, Sahitia Bhavan, Allahabad.

Mulvihil Moyer, R & Hollander, S.C (eds) (1968), *Markets and Marketing in Developing Economics*, Ricgard D.Irwin, Homewood, Illinois.

Murthy, N. G. (1988), *Regulated Market in a Rural Economy*, Ajanta Publications, Delhi.

Newman, William. H. (1950). *Administrative Action, Prentice Hall* Inc., Englewood Cliffs N.J., New York.

Prasad, A.S.(1985), Agricultural Marketing as a Focal Point of Economic Development- A Case Study of Mohibullapur Mandi, Lucknow in Shrivastava V.K. (editor). *Commercial Activities and Development in Ganga Basin*, Concept Publishing Company, New Delhi.

Prasad, J. (1991), *Marketable Surplus and Market Performance*, Mittal Publication, Delhi.

Prasad, K.N. (1998), *Dimensions of Development Analysis of an Underdeveloped State,* Concept, New Delhi.

Radhakrishnan, V. (1971), *Marketing of Cash Crops: With Special Reference to Groundnut and Cotton in Khandesh*, Ph.D. Thesis, Univ. of Bombay.

Rajgopal, (1986). *Dynamics of Agricultural Marketing in India*, Rainbow Publications, Coimbatore.

Rajgopal, (1988), *Micro-Level Planning for Agricultural Marketing*, Renaissance Publication, Delhi.

Riley, H.M and Webex, M.T. (1979), *Food and Agricultural Marketing in Developing Countries*-An Annotated Bibliography of Doctoral Research in Social Sciences, 1969-79, Deptt of Agi. Economics, Michigan State University.

Sami, A. (1980), *Intra-Urban Market Geography*, Concept Publication, New Delhi.

Saxena, H.M. (1990), *Marketing Geography*. Rawat Publications. Jaipur.

Saxena, H.M. (1972), *Regulated Agricultural Markets*, Rawat Publications, Jaipur.

Saxena, H.M. (1992), *Regulated Agricultural Markets- A Case Study* of Rajasthan, Rawat Publication.

Saxena, H.M. (2003). *Marketing Behaviour: A Regional Analysis*, R.B.S.A. Publishers, Jaipur.

Saxena, P. (2003), *Marketing and Sustainable Development*, Rawat Publications, Jaipur.

Sharma, S.K. and Archana, Bhargava .(1998), The Study of Transport Facilities and Market Centres in Madhya Pradesh, in B.C. Vaidya, (editor), *Readings in Transport Geography: A Regional Perspective*. Delhi: Devika Publication.

Shrivastava, V.K. (1988). *Commercial Activities and Rural Development in South Asia: a Geographical Approach,* Concept Publication, New Delhi.

Shrivastava, V.K.,(1971). Agricultural Markets of Uttat Pradesh, in Noor Mohammad (eds), *Perspective in Agriculture Geography,* Vol.III. New Delhi.

Singh, K.N. (1962), *Rural Markets and Urban Centres in Eastern U.P, Geographical Analysis,* Ph.D. Thesis Unpublished, B.H.U., Geography Department.

Singh, R.L (1971), India : *A Regional Geography,* National Geographical Society of India, Varanasi .

Singh, G. N. at al (1987), *Agricultural Marketing in India*, Chugh Publications, Allahabad, India.

Singh, L.P. (1983), *Regulated Markets in India*, Capital Publishers. Delhi.

Sinha, G.N. (1956), *An Introduction to Food Economics*, Allahabad.

Sinha, S.P . and Verma, B. N., (1974) *A Study of Marketable Surplus, Marketing Costs and Margins of Foodgrains in North Bihar,* University of Bihar.

Sivarama Prasad, A. (1985), *Agricultural Marketing in India*, Mittal Publications, Delhi.

Smith, Carol. A. (1976), *Regional Analysis*, Vol.I Economic System, Academic Press, New York.

Smith, R.H.T. (1972), The Synchronization of Periodic Market in W.P. Adams and F.M. Halleiner (eds), *International Geography*, Toronto, Vol, pp. 591-93.

Subba Rao, K. (1978), *Rice Marketing System and Compulsory Levies in Andhra Pradesh*, Allied Publishers Private Limited, Bombay.

Suodgrass, Milton M, and Wallace, L.T. (1982), *Agriculture Economics and Resource Management*, Prentice Hall of India.

Suess, E. (1904-24), *The Face of the Earth*, Oxford.

Taori, K. (2003), *Marketing the Unorganised Sector*, Concept Publishing Company, New Delhi.

Lele, U. (1968), *Working of Grain Markets in States of India*, USAID Research Project, Cornel University.

Upender, M(1990), *Marketable and Marketed Surplus in Agriculture*, Mittal Publication, Delhi.

Vance, J.E. (1970), *The Merchant's World: The Geography of Wholesaling*, Prentice-Hall.

Yasin, G. (1976), *Marketing of Agricultural Products in Punjab*, Punjab Board of Economic Inequality, Lahore.

Zaibun, Y. Jasdanwalla. (1966), *Marketing Efficiency in Indian Agriculture*, Allied Publishers, Bombay.

JOURNALS

Ahmad, Rais. (2000), Management of Indian Agricultural Marketing Cooperatives in Changing Economic Environment, *Asian Profile*, Vol. 28, No. 5, pp. 411-420.

Amani,K.Z and Khan, N. (1989), Agricultural Marketing in Uttar Pradesh, *The Geographer*, Vol .XXXVI, No.2, pp-7-17.

Amani,K.Z.and Khan, N. (1993), Spatial Behaviour of Consumers and Traders in Periodic Markets in a North Indian State : A Case Study, *Asian Profile*, Vol, 21. No,3, p-245.

Ambrose, P.J. (1968), An Analysis of Intra-urban Shopping Pattern, *Town Planning Review*, Vol.38, pp-327-34.

Baqee, A. M. and Ahmad, N. (1990), Rural Markets- A Contact Number Analysis, *The Geographer*, Vol. XXXVII, No.1, pp. 35-40.

Harris, B. (1980), Regulated Food Grain Markets, A Critique Social Scientist, Vol. VIII, pp. 22-31.

Behari, O.P. (1993), Agricultural Marketing Education, Training and Extension in India (Country Paper), *Agricultural Marketing*, Vol. XXXVI, No. 2, pp 49-70.

Bhatia, G.R. (1990), Legal and Administrative Framework for Regulation and Management of Agricultural Produce Markets in India, *Agricultural Marketing*, Vol. XXXIII, No. 1, pp. 14-28.

Bhushan, B. (1994), Agricultural Marketing in India: Structural Weakness and Agenda for Reforms, *Kurukshetra*, Vol.XLIII, No.2, pp.9-13.

Bhuyan, S. (1990), State Intervention in Agricultural Marketing: Is it Necessary, *Agricultural Marketing*, Vol. XXXIII, No. 1, pp. 7-13.

Brush, J.E., and Guathier, H.L. (1968), Service Centre and Consumer Price, University of Chicago, Research Paper, 113.

Bogahawatte, C. (1988), Seasonal Variations in Retail and Wholesale Prices of Rice in Colombo Markets, Sri Lanka, *Indian Journal of Agricultural Economics*, Vol.43, No.2, pp-139-147.

Chong-Y, L. (1982), The Food Marketing System in China: with particular reference to the Shang-Hai Area, *Journal of Rural Development*, 5, Ap.91-107.

Clough, P. (1981), Rarmersand Traders in Hauseland, *Development and Change*, Vol. 12, No.2, pp.273-292.

Datta, T.K. (1994), Impact of Seasonality on Market Efficiency of Agri-Produce, *Agricultural Situation in India*, Vol.XLIX, No.7, pp. 509-515.

Deshpande, C.D. (1941), Market Village and Periodic Fairs of Bombay, *Indian Geographical Journal*, Vol. 16, pp. 327-39.

Dixit, R.S. (1980), Market Synchronization: The Case of the Bundelkhand of the Umland of Kanpur Metropolis, *The Indian Geographical Journal*, Vol. 55, No.1 and 2, pp. 58-61.

Dixit, R.S. (2001), Analysis of Spatial Distribution of Regulated Agricultural Markets, *Geographical Review of India*, Vol 63, No. 2, pp. 141-152.

Dixit, R.S. (2001), Statistical Distribution and Pattern of Spatial Distribution of Regulated Agricultural Markets of U.P., *The Deccan Geographer*, Vol. 39, No. 2, pp. 13-26.

Eigmy, T.H. (1972), Rural Periodic Markets and the Extension of an Urban System, A West Nigerian Example, *Economic Geography,* Vol. 48, pp. 299-315.

Eswarappa. (1991), Market Complex in Bangalore City: A Story of Success and Failure, *The Indian Geographical Journal*, Vol. 66, No. 1 pp. 59-62.

Gabre, M. (2001), The Role of Intermediaries in Enhancing Market Efficiency in the Ethiopian Grain Market, *Agricultural Economics*, Michigan

Ghose, S. (1993), Report on the Consultative Committee on Agricultural Marketing, *Agricultural Marketing*, Vol. XXXV, No. 4, pp. 33-38.

Goel, V .(2000), A Study of Market Arrivals and Procurement Pattern of Wheat by Public and Private Agencies in Punjab, *Indian Journal of Regional Science*, Vol.XXXII, No.2, pp.94-102.

Harris, B. (1974), The Role of Punjab Wheat Markets as Growth Centres, *Geographical Journal*, Vol. 140, pp. 52-71.

Harriss, B. (1980), Regulated Food Grain Markets, A Critique Social Scientist, VIII, March 8, pp. 22–31.

Hayami, Y. (1999), Middlemen and Peasants in Rice Marketing in the Philippines, *Agricultural Economics*, Michigan

Hay, A.M. (1977), Notes of Economic Basis for Periodic Marketing in Developing Countries, *Geographical Analysis*, Vol. 3, pp. 72-79.

Huang, J. and Bouis, H. (2001), Structural Changes in the Demand for Food in Asia, *Agricultural Economics*, Michigan

Hill, P. (1967), Markets in Africa, Journal of Modern African Studies, Vol. 1 pp. 445-453.

Hodder, B.W. (1965), Distribution of Markets in Yarubaland, *Scottish Geographical Magazine*, Vol. 81. pp. 48-58.

Jana, M.M.(1978), Hierarchy of Market Centres in Sabarmati Bana, *Geographical Review of India*, 40, pp. 164-174.

Jones, W. D. (1970), Measuring the Effectiveness of Agricultural Marketing in Contribution of Economic Development: Some African Examples, Food Research Institute Studies, Vol.9, No.3, pp.175-96.

Jones, W. D. (1974), Regional Analysis and Agricultural Marketing in Tropical Africa: Concepts and Experience. Food Research Institute Studies, Vol.13, p.3-28.

Katre, R.S et al (1993), Trends and Variability in the Prices and Arrivals of Rice in Selected Markets of Maharashtra State, *Agricultural Situation in India,* Vol.XLVIII, No.2, pp.67-70.

Khan, N. Shrivastava, V.K. and Ali A. (1999) Study of Itinerant Trading System in North India: A Case Study, *Asian Profile*, Vol. 27, No. 6, pp. 511-520.

Khan, N. (1991), Synchronization of Periodic Markets in Faizabad District, North India, *Philippine Geographical Journal*, Vol. 35, No.1 pp. 13-26.

Khan, N. (1988), Direct Marketing in Agriculture in Faizabad District, *The Geographer*, Vol.XXXV, No.2, pp.68-79.

Khan, N. and Ali, A. (1998), Periodic Markets and Rural Transformation in Gonda District, U.P. India, The American Geographical Society, *Focus*, Vol. 45, No. 1 pp. 34-37.

Krishnan, V. (1932), A Retail Markets Potential Model, *Journal of the American Institute of Planners*, Vol. 31, pp. 134-43.

Kumar, A. (1989), Spatio-Temporal Variations and Determinants of Rice Cultivation in Bihar, *Agricultural Situation in India*, Vol.XLIV, No-3, pp.181-187.

Lakshmi, A.L. and Fazal, S.(1993), Farmers Decision Making Process in Traditional Versus Commercial Farming: A Case Study of Upper Ganga-Yamuna Doab, *The Geographer*, Vol. XL, No. 2, pp. 1-20.

Lakshmi, A.L. and Fazal, S. (1994). Marketing of Agricultural Produce by the Farmers in Upper Ganga Yamuna Doab Region India, *The Geographer*, Vol. XLI, No. 1, pp. 1-12.

Maheshwari, A. (1993), Market Fragmentation and Market Sharing in Wholesale Trade Centres in Karnatka, *Indian Journal of Agricultural Economics*, Vol.48, No.4, pp-658-666.

Mahalingam, S.(1990), Co-operative Approach for Effective Marketing, Distribution and Post Harvest Handling- A Case Study in Salem District of Tamil Nadu, *Agricultural Marketing*, Vol. XXXII, No. 4, pp. 34-39.

Malathy, D. (1999), Employment and Earnings of Men and Women in the Scientific and Labour Market in India, *Manpower Journal,* Vol. XXXV, No. 1, p. 13.

Mathur, V.S. (1941), Agricultural Marketing in Western United Province, *Indian Geographical Journal*, Vol. 16. pp. 9-13.

Mishra, S and Routray. (1995), Role of Market Towns in the Delhi Metropolitan Region-A Case Study of "Palwal", Haryana, *Asian Profile*, Vol,23. No.4, pp-329-348.

Mirchandani, R.T. and Hiranandani, G.T. (1963), Regulated Markets: Their Review and Impact on Market Structure and Efficiency- Seminar on Marketing of Agricultural Commodities, *Indian Society of Agricultural Economics*. Bombay.

Millor, J.W. (1968), The Function of Agricultural Press in Economic Development, *Indian Journal of Agricultural Economics*, 23 (1).

Mukerjee, A.B. (1954), The Bi-weekly Market at Modinagar, *Indian Geographer*, Vol. 2, pp. 271-93.

Mundar, R. (1999), Agricultural Marketing Issues and Challenges, *Agricultural Marketing*, Vol. XLI, NO. 4, p. 24.

Nahatkar, S.B., Sharma, H.Q. and Chauhan, R.S. (1999), Analysis of Market Arrivals and Prices of Wheat in Sehore Regulated Markets of Madhya Pradesh, *Agricultural Marketing*, Vol. XLI, No. 4, p.5.

Nayyar, Y.Z. F. (1972), Research in Agricultural Marketing in the Present Context, In Seminar on Emerging Problems of Marketing of Agricultural Commodities, *Indian Society of Agricultural Economics*, Bombay.

Prasad, J. (1994), Emerging Issues of Agricultural Marketing in Bihar, Kurukshetra, Vol.XLIII, No.2, pp.27-30.

Patnaik, K.U.S. (1987), Groundnut Farm Economy in Alternative Market Channels, *Indian Journal of Agricultural Economics*, Vol.42, No.4, pp-595-603.

Patnaik, N. (1953), Study of the Weekly Market of Barpali, *Geographical Review of India*, Vol. 15, No. 1, pp. 19-31.

Pawar, C.T. and Lokhande, T.N. (2000), Spatial Distribution of Market Centres in Kolhapur District Maharashtra, *Geographical Review of India*, Vol. 62, No. 1. pp. 59-71.

Raju, V.T. and Lakshmi, K. (1999), Performance of Regulated Markets in Andhra Pradesh, *Agricultural Marketing*, Vol. XLI, No. 4, p. 21.

Ramanayya, V. (1972), "Emerging Problems in Agricultural Marketing: Seminar on Emerging Problems on Marketing of Agricultural Commodities, *Indian Society of Agricultural Economics*, Bombay.

Kumar,R. et al. (2000), Determinants of Prices of Agricultural Commodities in the Regulated Markets of Andhra Pradesh, *Agricultural Marketing*, Vol. XLIII, No. 1, p. 19.

Ravi, K.N. et al. (2000), Growth and Development of Regulated Markets in Haryana, *Indian Journal of Agricultural Marketing,* Vol. 14, No. 3, p. 25.

Ravikumar, K.X. et al. (1999), Performance of Market Intermediaries in Aduni Regulated Market of Kurnool District (A.P.). *Agricultural Marketing*, Vol. XLII, p. 36.

Ray, D.M., (1967), Cultural Differences in Consumer Travel Behaviour in Eastern Ontario, *Canadian Geographer*, Vol. 11, pp. 134-156.

Satyanarayana, (1984), Small Farmers in Product Market, *Kurukshetra*, 13 (2)

Shah, N.R. (1997), Emerging Problems of Agricultural Marketing- A Case Study of Mustard in Gujarat, *Agricultural Situation in India,* Vol. LIV, No. 5, p. 247.

Sharanesh, S. Handigamur and Kunnal, L.B. (1999), An Analysis of Arrivals and Prices of Chickpea in Regulated Markets of Karnataka, *Agricultural Marketing*, Vol. XLII, No. 3, p. 41.

Singh, C and Mathur, V.C. (1994), Growth and Instability in the Production and Price of Potato in India, *Agricultural Situation in India*, Vol.XLIX, No-7, pp.429-436.

Singh, B.P. and Tiwari R. (2003), Farmers Development Through Information Technology, *Yojana*, Vol. 47, No. 5, pp. 44-48.

Skinner, G.W. (1965). Marketing and Social Structure in Rural China, *Journal of Asian Studies*, Vol. 24. pp. 3-45.

Smith,V.A.(1975), Marketing Agricultural Commodities in Pichincha Province, Ecuador, *Geographical Review*, Vol.65,pp.353-63.

Srivastava, V.K (1984), Progress of Marketing Geography in India, *Indian Journal of Marketing Geography*, Vol. 2, (1-2)

Srivastava, V.K. (1981), Agricultural Marketing in Uttar Pradesh, *Uttar Bharat Bhoogol Patrika*, Vol.16, No.2, pp.117-126.

Subrahmanyam, K.V. (1986), Post-harvest Loses in Horticultural Crops : An Appraisal, *Agricultural Situation in India*, Vol.XLI, No.5, pp.339-343.

Sukhsanjam, Chahal, S.S. and Toor, T.S. (2000), An Impact of Market Regulation on Adequacy of Market Infrastructure in Punjab, *Indian Journal of Agricultural Marketing*, Vol. 14, No. 3, p. 18.

Symnaski, R. (1974), Complex Periodic Market Cycle, *Annals of Association of American Geographers*, Vol. 64, pp. 203-213.

Tamaskar, B.G., (1967), The Weekly Market of Sagar Damoh Plateau, *National Geographical Journal of India*, Vol. 12.

Tewari, S.C et al (1987), Economic Status of Marginal and Small Farmers- A Case Study of Kawal Catchment Area of Himachal Pradesh, *Agricultural Situation in India*, Vol.XLII, No.9, pp.793-799.

Thorpe, D. and Nader, G.A. (1967), Costumer Movement and Shopping Centre Structure: A Study of Central Place System in Northern Durban, Regional Studies, Vol. 1, pp. 173-191.

Vaikunthe, L.D. (2000), Regulatory Framework, for Agricultural Marketing- A Case Study of APMCS in Karnataka, *Indian Journal of Agricultural Marketing*, Vol. 14, No. 3, p. 1.

Wayne, M.(1972), The Periodic Market System in North Eastern Ghana, *Economic Geography*, 40, pp.333-344.

Weersink, A. and Rozelle, S. (1997), Marketing Reforms, Market Development and Agricultural Production in China, *Agricultural Economics*

Wernerheim, M. C. and Sharpe, A. C. (1999), Producer Services and the "Mixed-Market" Problem: Some Empirical Evidence, *Area*, Vol. 31, No. 2, pp. 123-140.

Yadav, R.N (1988), Marketing of Summer Vegetables at Kanpur: A Case Study, *Indian Farming*, Vol.XXXVIII, No.1, pp-31-35